with Compliments of Sereno Watson

CONTRIBUTIONS TO AMERICAN BOTANY. XVII.

I. Miscellaneous Notes upon North American Plants, chiefly of the United States, with Descriptions of New Species.

II. Descriptions of New Species of Plants, from Northern Mexico, collected chiefly by Mr. C. G. Pringle, in 1888 and 1889

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Presented June 12, 1889.

1. *Miscellaneous Notes upon North American Plants, chiefly of the United States, with Descriptions of New Species.*

Arabis humifusa (*Sisymbrium humifusum*, Vahl). The typical form of this Greenland species has been collected at Ungava Bay in northern Labrador by Mr. L. M. Turner, and a form with the lower leaves and base of the stem pubescent at York Factory on Hudson's Bay by Mr. James M. Macoun and Dr. Robert Bell. The mature pods of this variety are those of an *Arabis*, with the seeds narrow and wingless, and the radicle partially incumbent upon the cotyledons, as it is represented in the figure of the species given in Flora Danica (t. 2297). The characters accord with those of several other species which have usually been recognized as belonging to *Arabis*, though discrepant from the more typical species of the genus. Of these species (*A. lyrata*, *A. dentata*, *A. spathulata*, *A. humifusa*, and *A. Hookeri*, Lange) I would form a section *Pseudarabis*, as proposed by me in the recent new edition of Gray's Manual (p. 67), characterized by very small oblong or elliptical wingless seeds, having the cotyledons rarely strictly accumbent. They are all biennial or perennial, the pubescence of simple or rarely forked hairs.

Arabis Howellii. Perennial, with short stems (1 to 4 inches high) from a branching cespitose caudex, glabrous: leaves glaucous, entire, the lower linear-oblanceolate, an inch long, often sparsely ciliate toward the base, the few cauline narrowly oblong, obtusish, sessile, somewhat clasping but not cordate nor auriculate at base: flowers few, pale or bright pink, 3 or 4 lines long: pods erect, 1½ inches long by 2 lines broad, acuminate; stigma sessile; valves nearly nerveless: seeds orbicular, broadly winged. — Collected at Ashland Butte, Siskiyou Mountains, Oregon, by Mr. Thomas Howell in July,

1887; also by Mr. W. H. Shockley, August, 1888, in the White Mountains of Mono County, California, at 11,000 feet altitude.

STREPTANTHUS (EUCLISIA) LEMMONI. Annual, glabrous, paniculately branched: lower leaves unknown, the upper cauline lanceolate, auricled at base; rameal bracts ovate to orbicular, cordate-clasping with very short lobes: flowers rather small (2 to 4 lines long), the sepals acuminate with recurved or spreading tips; petals narrow, apparently white: filaments distinct: pods 2 or 3 inches long, narrow, on short pedicels; stigma sessile. — In the Santa Catarina Mountains, Arizona; collected by Mr. J. G. Lemmon, 1880.

STREPTANTHUS BARBATUS. Glabrous and glaucous; stems apparently several from a perennial (?) root, simple or at length branching: leaves crowded, uniform and nearly equal, cordate, sessile and clasping, obtuse or acutish, 9 lines long or less; floral bracts none: flowers purple, 3 or 4 lines long; sepals obtusish, setosely bearded near the apex: filaments distinct: pods spreading, on pedicels 1 to 3 lines long, curved, 1 or 2 inches long by 1½ lines broad; stigma sessile or nearly so: seeds narrowly margined. — Sandy bottoms along the upper Sacramento, first collected by the botanists of the Wilkes Expedition (*S. tortuosus*, Gray in Torr. Bot. Wilkes, 227), and rediscovered by Mr. Lemmon in 1879.

STREPTANTHUS ARIZONICUS. Annual or biennial (?), glabrous and glaucous, usually stout and tall, branching: leaves rather thin, entire or nearly so, acute, the lower oblong-lanceolate, petiolate, not ciliate, the upper oblong- to narrowly lanceolate, with rounded auricles: flowers pale; sepals strongly saccate; petals narrow, 6 or 7 lines long: filaments distinct: pods erect or ascending, 2 or 3 inches long by 2 or 2½ lines broad, obtuse or acute, with a broad sessile 2-lobed stigma: seeds very broadly winged. — In the mountains of southern Arizona, collected by C. G. Pringle in 1881, and later by S. G. Parish and J. G. Lemmon (n. 4170).

STREPTANTHUS * CAMPESTRIS. Annual or biennial, glabrous and

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* The known species of *Streptanthus* may be grouped as follows —

§ 1. EUSTREPTANTHUS. Flowers large, the blade of the petals broad. Filaments distinct. Pods erect or ascending. Glabrous annuals.

* Floral bracts conspicuous.

1. S. BRACTEATUS, Gray. — Southwestern Texas.

* * Floral bracts none or minute.

2. S. MACULATUS, Nutt. — Arkansas and eastern Texas.
3. S. PLATYCARPUS, Gray. — Western Texas to Sonora.

glaucous, stout, 2 to 4 feet high, branching: leaves rather thick, acute, often irregularly toothed, the teeth at first setosely tipped and the leaf sparingly setose-ciliate near the base; cauline leaves lanceolate or oblanceolate: flowers more or less dark purple, 4 or 5 lines long, the sepals often hairy at the tip: filaments distinct: pods spreading and curved, 3 to 6 inches long by about a line broad, beaked with a short stout style and shortly lobed stigma: seeds winged. — At Campo, near the southern boundary of California; George R. Vasey and S. G. Parish in 1880. A specimen collected by the latter in the San Bernardino Mountains is apparently the same.

Silene (Conosilene) multinervia. Annual, erect, sparingly branched, glandular-pubescent, about a foot high: leaves linear to linear-oblong, acute, the lowermost narrowly oblanceolate, 1 or 2 inches long: inflorescence dichotomously cymose; bracts linear: calyx narrowly ovate, 20–25-nerved, 5 or 6 lines long, the acuminate teeth usually purple-tipped; petals purplish, scarcely equalling the calyx, without appendages or auricles, emarginate: filaments glabrous, included: capsule nearly sessile, oblong-ovate, included: seeds minute,

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§ 2. EUCLISIA, Nutt. Petals narrow (the blade scarcely broader than the claw), undulate-crisped.

* Filaments distinct; cauline leaves clasping and auriculate; pods not reflexed.

← Annuals; branches bearing round-cordate bracts, which also frequently subtend or alternate with the lower pedicels.

4. S. tortuosus, Kell. — Northern California.
5. S. diversifolius, Watson. — Northern California.
6. S. Lemmoni, Watson. — Arizona.

← ← Glabrous and glaucous mostly simple-stemmed biennials or perennials (?), with the broad thickish leaves obtuse or only acutish, the cauline cordately clasping; sepals obtuse, usually more or less setose.

7. S. barnatus, Watson. — Northern California.
8. S. cordatus, Nutt. — From the Sierra Nevada to Colorado.

← ← ← Glabrous and glaucous annuals or biennials (?), with cauline leaves lanceolate and acute.

9. S. Arizonicus, Watson. — Southern Arizona.
10. S. campestris, Watson. — Southern California.
11. S. carinatus, Wright. — W. Texas to southern Arizona and Chihuahua.

* * Filaments distinct; pubescent annual, with sagittate leaves; pods narrow, reflexed.

12. S. heterophyllus, Nutt. — Southern California.

* * * Filaments distinct; leaves not clasping nor auriculate; pods narrow.

← Glabrous and glaucous biennial (?).

13. S. (?) Howellii, Watson. — Southern Oregon.

tuberculate, not crested. — Found near Jamuel, San Diego County, by C. R. Orcutt in April, 1885, and on the island of Santa Cruz, California, by T. S. Brandegee in 1888. The only representative in America of a small section of the genus (including *S. conoidea*, etc.), which is otherwise confined to the Mediterranean region and central Asia.

Silene Shockleyi. Slender, 3 to 8 inches high, puberulent throughout: leaves linear-oblanceolate, an inch or sometimes 2 inches long: flowers few or often solitary: calyx viscid-pubescent, cylindrical, 6 to 8 lines long, the acute lobes 1½ lines long; petals rose-colored to greenish, the auricled claws more or less exserted, with broad and more or less laciniate appendages and the blade (3 lines long) equally cleft to below the middle: stamens and style equalling the petals. capsule oblong, long-stipitate: seeds tuberculate on the back. — On the White Mountains in Mono County, California, at 12,000 feet altitude; W. H. Shockley, August, 1888. Of the *S. Oregana* group.

Buda borealis, Watson in Gray's Manual, 6 ed., p. 90. A glabrous diffusely branched annual, with very narrow leaves an inch long or less: pedicels 2 to 6 lines long, ascending or often widely spreading: sepals and petals (white) scarcely a line long: stamens

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+ + Annuals.

14. S. longirostris. (*S. longifolius*, Benth., var., Torr. in Pacific R. R. Rep. 4. 65. *Arabis longirostris*, Watson, King's Rep. 5. 17, t. 2.) — East of the Sierra Nevada from Washington to Utah, Sonora, and Lower California.

15. S. (?) flavescens, Hook. — Central California.

* * * * One or both pairs of the longer filaments connate; cauline leaves more or less sagittately auriculate (scarcely so in n. 17); annuals, with narrow pods.

+ Sepals nearly equal; pods ascending or spreading.

++ Both pairs of filaments connate; seeds wingless.

16. S. Breweri, Gray. — Central California.

++ ++ One pair of filaments connate; seeds winged.

= Glabrous.

17. S. hyacinthoides, Hook. — Indian Territory to Texas.

18. S. barbiger, Greene. — Central California. Calyx sometimes glabrous.

19. S. niger, Greene. — Central California.

= = Pubescent.

20. S. hispidus, Gray. — Central California.

21. S. glandulosus, Hook. (*S. peramœnus*, Greene. *S. albidus*, Greene, a white-flowered form.) — S. Oregon to San Luis Obispo County, Calif.

+ + Sepals very unequal, the outer much dilated; pods reflexed, narrow.

22. S. polygaloides, Gray. — Central California.

variable in number: capsule ovate to oblong-ovate, twice longer than the calyx or more: seeds variable as in *B. marina*, usually wingless and smooth or nearly so. — On the coast from Labrador to eastern Maine: Bonne Esperance, Labrador, and Rimouski County, Quebec (J. A. Allen); Anticosti and Prince Edward Islands (J. Macoun); Kent Co., N. B. (J. Fowler and J. Macoun); Eastport, Maine (W. G. Farlow). This plant is clearly distinct from *B. marina*, as has been pointed out by Dr. Britton (Torr. Bull. 16. 127), who refers it with little doubt to *Spergularia salina*, Presl. This, however, is generally regarded as merely a synonym for one of the forms of *B. marina*. I have been unable to identify our plant with any foreign species, and have given it a specific name having reference to its extreme northern habitat. In choosing between the two generic names proposed by Adanson, *Tissa* and *Buda*, which are on an equality as respects priority of publication, the adoption of *Buda* by Dumortier in 1827 in my opinion leaves no room for debate. In this decision I have reason to believe myself also in accord with the best botanical authorities of England. In my use hitherto of *Lepigonum*, "Fries," in preference to *Spergularia*, Presl, for the name of this genus, I have been in error through overlooking a note by Fries upon the final page of his *Flora Hallandica*, where, in correction or definition of his previous statement, he expressly makes *Lepigonum* a subdivision of *Arenaria*. The first one to use *Lepigonum* as a generic name was Wahlberg in his *Flora Gothoburgensis* (1820–24), which was subsequent to Presl's adoption of the name *Spergularia*.

Trifolium Catalinæ. Annual, low, branching from the root, appressed villous-pubescent, the ultimate or penultimate nodes of the branches elongated and bearing a single or two approximate sessile heads subtended each by a nearly sessile trifoliate leaf: leaflets oblong-obovate, obtuse or broadly emarginate, erosely dentate, 3 or 4 lines long; stipules ovate or ovate-lanceolate, acuminate, entire: heads small, ovate; flowers sessile in whorls: calyx-tube coriaceous, narrow-campanulate, much shorter than the attenuate-subulate erect and rather rigid plumose teeth; corolla narrow, purplish, little exceeding the calyx. — Santa Catalina Island, California; T. S. Brandegee, May, 1890. A remarkable species, unlike ordinary American forms and of a distinct European type, most nearly resembling *T. saxatile* of the high Alps of Switzerland. In this respect it is a counterpart of the *Silene multinervia*, described on a previous page, and a few other species, and even genera, which form an interesting element in the flora

of the Californian coast. This species, like the *Silene*, has been compared with the European material at Kew through the kindness of Prof. Oliver and Mr. Baker. It differs from *T. saxatile* in the more unequal nodes of the stem, the more dentate and not bifidly emarginate leaflets, and the more coriaceous calyx with longer and more rigid teeth.

Astragalus (Homalobus) Forwoodii. Annual, the several ascending stems about a foot high, sparsely covered with a fine pubescence: leaflets 5 or 6 pairs, linear to linear-oblong, 6 to 9 lines long: peduncles exceeding the leaves, bearing short loose racemes of small (4 or 5 lines long) deflexed flowers: calyx campanulate, the narrow teeth nearly equalling the tube; corolla whitish with a dark purple keel: pods deflexed, long-stipitate, thin-coriaceous, flattened, the ventral suture straight and the dorsal much curved, 9 to 12 lines long. — Black Hills of S. Dakotah, in dry rocky places in creek bottoms; Dr. W. H. Forwood, U. S. A., May, 1887. Near *A. stenophyllus*, Torr. & Gray (*A. filipes*, Torr.).

Vicia Thurberi. Annual, about a foot high, the young leaves, etc., pubescent, becoming glabrous: leaflets 4 to 12, narrowly linear, acute, 3 to 7 lines long; stipules small, subulate-lanceolate or linear, not at all sagittate, entire: peduncles short (3 to 6 lines long), bearing one or rarely two small white or purplish flowers: calyx nearly glabrous, the teeth rather short-acuminate: pods glabrous, sessile, oblong, obliquely acute at each end, about 9 lines long by $2\frac{1}{2}$ or 3 broad, 5–7-ovuled. — From southern Utah and Colorado to Arizona and New Mexico; collected by Thurber (n. 150 and 299), Wright (n. 1350), Parry (n. 33, of 1874), Lemmon (n. 50, of 1880), Brandegee, etc., and referred to the Californian *V. exigua*, Nutt. That species is a taller plant, with similar foliage and fruit, but the stipules narrowly semi-sagittate and the more slender peduncles (1 to 2 inches long) usually 2–3-flowered, the flowers approximate. The only Nuttallian specimen of *V. exigua* in the Gray Herbarium was collected by Gambel on Catalina Island, and is the same as others collected by Coulter, Samuels, Thurber (San Diego), Bolander (Los Angeles), and M. E. Jones (Encenada, Lower California). The original description in Torrey & Gray's Flora seems to include also the next species.

Vicia Hassei. Often tall: leaflets 3 to 6 pairs, linear to narrowly oblong, acute or obtuse and apiculate, or more frequently truncate and emarginate or toothed at the apex; stipules semi-sagittate with the rather broad lower lobe usually 2–4-toothed: peduncles 6 to 15 lines long, 1-flowered or sometimes remotely 2-flowered: pod more

attenuate at each end and short-stipitate, 5–9-ovuled, 9 to 16 lines long. — On open grassy hills about Los Angeles, California, growing with *V. exigua;* Dr. H. E. Hasse. Also collected at Santa Cruz by Dr. C. L. Anderson, at Benicia by Dr. Bigelow (*V. exigua*, var. (?) *Californica*, Torr. in Pac. Railroad Rep. 4. 76), and on Guadelupe Island by Dr. Palmer.

Strophostyles angulosa, etc., Ell. The characters which distinguish those species of *Phaseolus* that were separated by Elliott under the name of *Strophostyles* are so marked that the restoration of the genus has long seemed to me desirable, for which the revision of the Manual has given an opportunity. These peculiarities are the sessile or very nearly sessile capitately clustered flowers, never racemose, the less curved and never spirally coiled keel and style, and the more or less mealy-pubescent quadrangular or subcylindric seed, subtruncate at the ends and with a narrow hilum half its length or more. Bentham's section *Strophostyles* is based mainly upon the production of the stipules below the insertion, which is not the case in our species. Elliott's specific names are to be retained for his species, and to these is to be added *Phaseolus pauciflorus*, Benth. The *P. pauciflorus*, Dalz., of the Indian flora, can therefore stand.

Eriogynia (Kelseya) uniflora. Very densely cespitose (2 or 3 inches high), with numerous slender branching stems densely covered with persistent imbricated leaves, which are light green becoming brownish, narrowly oblong-oblanceolate, 1 to 1½ lines long, nerveless, acute, entire, silky-villous: flowers solitary, terminal (often apparently lateral from the prolongation of a branch), equalling the leaves, very shortly pedicellate: calyx-lobes oblong-ovate, obtuse, villous; petals a half longer, linear-spatulate, obtuse or emarginate: stamens 10, distinct, long-exserted, inserted outside of the thickened margin of the disk: carpels usually 4 (or 5, alternate with the sepals), distinct, oblong, somewhat hairy on the ventral edge, coriaceous in fruit and more or less dehiscent by both sutures; styles elongated, stigmatic at the narrow apex: seeds 3 or 4, linear-oblong, with a thin close testa. — Discovered at the "Gate of the Mountains," near Townsend, Montana, on precipitous cliffs bordering the Missouri River, by Rev. F. D. Kelsey, on 4th July, 1888.

The habit and inflorescence of this plant are remarkable among the *Spiræeæ*. With the exception, however, of its solitary flowers it closely resembles *Spiræa cæspitosa*, which has been hitherto retained in *Spiræa* as a section *Petrophytum*, as proposed by Nuttall, distinguished from the typical species by its racemose inflorescence and low

habit. The genus *Eriogynia* is separated from *Spiræa* by its cespitose habit, peculiar foliage, racemose inflorescence, and loose seed-coats. It is described also as having united filaments, but this does not appear to be the case. The staminodia attributed to it are merely the crenate lobings of the margin of the disk. It is therefore only in its foliage and seed-coats that it differs from *Petrophytum*. The dehiscence of the coriaceous carpels by both sutures is the same in both. No more satisfactory disposition of our present abnormal species occurs to me than to transfer the section *Petrophytum* (excluding the additional species referred to it by Maximowicz) to *Eriogynia*, and to add *E. uniflora* as a section *Kelseya*. This leaves *Spiræa* somewhat more homogeneous, and brings together species that are similar in their dwarf habit and not essentially unlike in other respects. The determinate inflorescence of *Kelseya* occurs also in *S. Ulmaria*, etc., and in *S.* (*Chamæbatiaria*) *Millefolium*.

The genus *Spiræa* has been recognized generally, and by botanists of the highest authority, as a composite one, which it was better to retain as made up of a number of well marked sections than to divide. The one notable exception is Maximowicz, who has made a very careful study of the whole group and whose conclusions are not to be rejected unadvisedly. In addition to *Physocarpus*, as distinct from *Neillia* * (to which it was referred by Bentham & Hooker), and *Eriogynia*, which genera seem to me well founded, he has separated several other genera, placing *Aruncus* and the Asiatic *Sibiræa* in his group *Spiræeæ*, — *Chamæbatiaria* (*S. Millefolium*), with the Old World *Sorbaria* † and *Spiræanthus*, among his *Gillenieæ* (as stipulate and having the carpels opposite the sepals instead of alternate with them), — *Holodiscus* (*S. discolor* and the very similar S. American *S. argentea*) among the *Potentilleæ*, — and *Filipendula* (*Ulmaria*) among the *Sanguisorbeæ*. The two latter genera are removed from

* The *Neillia capitata*, Greene, can be in no way separated from the ordinary *P. opulifolius*. His *N. malvacea* also, judging from the characters, appears to be a common form of *P. Torreyi*, though there are perhaps characters other than those given by him upon which that species can be divided.

† As respects the names adopted by Maximowicz, *Sorbaria* as the sectional name of Seringe he considers as having precedence by right of priority over Lindley's later generic name *Schizonotus*. Both names, however, are antedated by Rafinesque's *Basilima* (1815), and this makes it unnecessary in any case to disturb the *Schizonotus* of Dr. Gray. *Filipendula* is rightly preferred to *Ulmaria*, inasmuch as it was adopted by Linnæus himself in several of the early editions of the *Genera*, and the genus was definitely characterized by him as the equivalent of both the Tournefortian genera.

the former groups on account of their indehiscent 1-seeded fruit, which is called an achene. But the carpels do not become such achenes as characterize the tribes to which he refers these genera, where the ovules are solitary, for the ovules are here always two and pendulous, while the mature fruit here, though indeed tardily or perhaps never dehiscent, still is found to open more or less readily by the ventral suture on dissection. Focke (in Engler & Prantl) recognizes this objection, and accordingly forms two subtribes, *Holodisceæ* and *Ulmarieæ*, for the two genera, quite unnecessarily, for they fall very naturally among the *Spiræeæ* and *Gillenieæ*. In fact *Holodiscus* * is a true *Spiræa*, except in the thinner and less dehiscent carpels and fewer ovules, and may well be kept as simply a section of that genus. The Mexican *S. parvifolia* appears, from the descriptions that are given of it, to belong rather to this section than to the section *Petrophytum*, where it is placed by Maximowiez. *Filipendula* is much more distinct in its stipules and divided leaves, cymosely paniculate inflorescence and capitate stigmas, and is more nearly related to *Gillenia*. Too great stress should not here be laid upon the position of the carpels (in *Filipendula* alternate with the sepals when of the same number), as their number may be considered as normally ten in all cases, with irregular or regularly alternate suppression. Focke includes *Chamæbatiaria* in *Sorbaria*, but why he does not with as good reason include *Spiræanthus* is not evident. The three genera are closely allied, very much in the same way as the three sections of *Eriogynia*. But *Chamæbatiaria* is sufficiently well marked to be retained as the American representative of the group. Finally, the separation of *Aruncus* upon its herbaceous habit, compound leaves, diœcious racemose-paniculate inflorescence, etc., leaves *Spiræa* itself still a large genus, but well defined, and with a good degree of uniformity in its characters.

Eremiastrum Orcuttii. Pappus consisting of five white oblong-ovate laciniate paleæ and as many inner alternate bristles twice as long: in every other respect — habit, foliage, pubescence, involucre, etc. — the nearly exact counterpart of *E. bellioides*. — Collected in the southeastern part of the Colorado desert, in San Diego County, California, by C. R. Orcutt, April, 1889. By the character of the pappus this plant is a *Chætopappa*. From its close resemblance to

* The ovules in the species of this section seem to be very often abortive. Upon the many apparently mature specimens of the forms of *S. discolor* in the Gray Herbarium I have succeeded in finding but a single seed.

E. bellioides it might be supposed to be a variety of that species, but no intermediate forms are detected among previous collections.

Aster Forwoodii. Of the *A. puniceus* group, stout and leafy (2 feet high), rough-pubescent: leaves large (4 inches long), sessile, ovate to lanceolate, short-acuminate, narrowed to a broad subauriculate base, coarsely serrate, very scabrous, hairy on the veins beneath; bracts of the corymbose panicle small and narrow: heads large (6 lines high); scales rigid, very unequal, short-acuminate with lax or squarrose herbaceous tips: rays purple, 4 to 6 lines long. — Black Hills of S. Dakota; Dr. W. H. Forwood, U. S. A., August, 1887. A strongly marked species, clearly distinct from *A. puniceus* and *A. Cusickii*, and in habit much resembling *A. foliaceus*, var. *Canbyi*.

Artemisia Forwoodii. Biennial, erect, 2 feet high, the simple stem bearing numerous axillary erect narrow and slender panicles: leaves canescent both sides with a short villous pubescence or the upper glabrous above, twice pinnately parted into linear acute segments; bracts of the glabrous inflorescence small, linear, entire: heads numerous, small (1 to $1\frac{1}{2}$ lines broad), globose-campanulate, with thin and subscarious greenish scales, 15–20-flowered. — Black Hills of S. Dakota; Dr. W. H. Forwood, September, 1887. Resembling *A. discolor*, with very numerous smaller subglobose heads in an elongated narrow compound panicle.

Lepidospartum latisquamum. A compact shrub 3 to 5 feet high, with numerous erect branches, floccose-tomentose and angled with mostly continuous lines of prominent greenish glands: leaves filiform, acute, an inch long or less: heads clustered at the ends of the branches, about 5-flowered; involucral scales broad and appressed, ovate to oblong, very obtuse, rigid and scariously margined, tomentose: corolla very deeply cleft: achenes densely villous, the long silky hairs passing into the very copious pappus. — Soda Spring Cañon, Esmeralda County, Nevada, at 6,000 feet altitude; W. H. Shockley, August, 1888. The anthers are almost caudate at base, but for which character the genus might be considered most nearly allied to *Bigelovia*.

Hieracium (Stenotheca) nigrocollinum. Subscapose, a foot high, sparsely hirsute throughout with white hairs: radical leaves thin, oblong-spatulate, obtuse, entire, the one or two on the base of the stem oblanceolate and acute: heads rather few in a loose oblong raceme, on slender peduncles $\frac{1}{2}$ to 1 inch long, somewhat rufous-tomentose and hispid, $\frac{1}{2}$ inch long: flowers numerous and apparently white: achenes (immature) somewhat tapering upward and shorter

than the whitish pappus. — Black Hills, S. Dakota; Dr. W. H. Forwood, June, 1887. Allied to *H. Fendleri*.

Eriogonum (Eriantha) Alleni, Watson in Gray's Manual, 6 ed., p. 734. Perennial, white-tomentose; stems naked below the dichotomous branches, 1½ to 2 feet high: radical leaves long-petiolate, ovate-lanceolate, cuneate to subcordate at base, the blade 4 inches long, greener above; upper leaves in whorls of 4 or 5 at the nodes, short-petiolate, ovate to oblong or oblong-ovate, acute, the lower 1½ to 3 inches long, much reduced above: involucres tomentose, those in the forks short-pedunculate; flowers glabrous, on tomentose pedicels, yellow, the segments elliptical, very obtuse, scarcely over a line long. — Collected on rocks, about a mile from the White Sulphur Springs, W. Virginia, by Dr. T. F. Allen in 1874. Closely allied to the more southern *E. tomentosum*, which differs in its more leafy stem, the lower leaves oblanceolate and long-attenuate at base, the upper sessile, and in the larger tomentose white flowers with broadly lanceolate segments.

Spiranthes præcox, Watson, l. c. 503. (*S. graminea*, Lindl. (?), Gray, Manual, 4 ed., p. xcviii. *S. graminea*, var. *Walteri*, Gray, l. c., 5 ed., p. 505.) A comparison of specimens of true *S. graminea* (collected by Dr. E. Palmer in Jalisco, Mexico) with the plant of the Atlantic and Gulf coasts that has been referred to it, shows too important differences to permit the latter to be considered merely a variety. The more leafy stems of our plant, its broader and more hyaline and usually more acuminate bracts, its larger flowers, its narrower and much less recurved lip, the more acutely beaked rostellum, and the narrower capsule, should suffice to characterize it as a distinct species.

Iris Caroliniana, Watson, l. c. 514. Rootstock rather stout: leaves elongated, 3 feet long by 12 to 15 lines broad, thin and lax, bright green, not glaucous or scarcely at all so: stem slender, 2 feet high; peduncles 2-flowered; bracts scarious, exceeding the pedicels: ovary 8 lines long, bearing a cylindric-campanulate tube 6 lines long; petals distinct at base, the outer 3 inches long, broadly spreading, with a yellowish green claw veined with brown, the elliptical blade lilac veined with purple and with a yellow spot reaching to the centre; inner petals oblong-spatulate, 2½ inches long, the blade lilac and claw yellowish; anthers as long as the filaments: wing of the stigma continuous with the erosely toothed lilac crest: capsule nearly 2 inches long, oblong, somewhat triangular with very rounded angles: seeds in one row in each cell, very large (4 or 5 lines broad and 2

lines thick), pale brown. — Cultivated in the Botanic Garden, Cambridge, from roots collected in 1888 near Wilmington, N. C., by Mr. W. A. Manda. Resembling in some respects *I. versicolor* of the Northern States, as it has been generally understood, which doubtless also includes the *I. Virginica* of Linnæus as represented by the original Gronovian specimen preserved in the herbarium of the British Museum. That species differs most notably in its erect glaucous and often much shorter leaves, and its very much smaller seeds in two rows in each cell. There are also less obvious differences in the coloring and shape of the smaller flowers. It varies to a considerable degree, especially in size, but in its main characters it appears to be constant and well defined.

Sisyrinchium angustifolium, Mill., and S. anceps, Cav. Upon comparison of plants of these species growing side by side near Cambridge on the 1st of June, 1890, the differences in the inflorescence were found to be constant. The glaucous hue was much more decided in the latter, while the flowers were indistinguishable, except that in *S. anceps* they were somewhat darker and the yellow spot at the base of each petal broad and truncate or emarginate at the top, but in *S. angustifolium* somewhat narrowed and irregularly rounded above. This latter species was already nearly past bloom, with the older capsules and seeds of full size ; the other was just coming into bloom.

Camassia Howellii. Bulb rather small, bearing few leaves about a foot long by 2 to 5 lines broad : flowering stem and elongated many-flowered raceme nearly 2 feet high ; pedicels spreading, becoming 9 to 12 lines long, at least twice longer than the linear bracts : petals pale purple, $\frac{1}{2}$ inch long, 3- (rarely 4- or 5-) nerved : capsule broadly triangular-ovate, very obtuse, 3 lines long ; cells 2–3-seeded. — At Grant's Pass, Oregon ; Thomas Howell, 1889. Flowering in May ; flowers opening at about 2 p. m., remaining open till sunset. Distinguished from other western species especially by the small capsules on slender widely spreading pedicels.

Sabal Mexicana, Mart. A palm which in the present imperfect knowledge of the species cannot be distinguished from *S. Mexicana* was collected by Berlandier (n. 877, "*Corypha edulis*") near Matamoras, and has more recently been found on the Texan side of the Rio Grande near Brownsville by Dr. Gorgas and by Prof. C. S. Sargent. This is the same also as 314 Ervendburg, collected on the savannas near Tantoyuca in the Department of Vera Cruz. It is said to be frequently 20 or 25 feet high, with a well defined trunk

10 or 12 inches in diameter. The petioles are very stout (1½ inches broad at the summit), with a ligule 6 inches long, and the blade (3 feet long or more) cleft a third of the way down between the plaits, which are an inch broad. The spadix is elongated and slender; the calyx and petals (1½ lines long) strongly nerved. The berries are often in pairs, 9 lines in diameter, sweet and edible; seeds 5 or 6 lines broad by 3½ thick, very much larger than those of any of the Atlantic States species.

Washingtonia Sonoræ, Watson, Proc. Amer. Acad. 24. 79. Dr. Palmer has recently sent from La Paz, Lower California, additional foliage of this species, together with flowering specimens. The flowers and inflorescence resemble very closely those of the San Bernardino species, having the calyx and petals somewhat thinner and more scarious, and the spadix very slender and sparingly branched. The petioles of the older leaves (3 feet long above the sheath and tapering from 2 inches to 9 lines in breadth) are very strongly convex on the lower side, thinning abruptly toward the margin, especially below the middle. The margin is thickly beset with very stout variously curved spines, which are mostly connected by a thick web of floccose hairs. In the young plant the petioles are very slender (2 lines broad), with scattered spines on the margin.

It has been difficult to identify satisfactorily the *W. filifera* and *W. robusta* of the gardens with the native palms of southern California. These two species as shown by Wendland (upon whose authority they rest) in the palm-houses at Herrenhausen, and as represented by specimens received from him and growing at the Botanic Garden at Cambridge, are so evidently different that they may well be distinct, — the latter species having darker green and more shining leaves upon shorter and stouter petioles, which give a more robust appearance to the plant. The source of the seeds from which the original "*Brahea filifera*" was raised by Linden at Ghent in about the year 1869 (as narrated by Wendland in Bot. Zeit. 37. 65) is not stated. I am informed, however, by Mr. W. G. Wright of San Bernardino, that for some years after that date the only source of seeds for the market was the trees in Cantilles Cañon (and perhaps also Palm Valley) in Lower California near the Mexican boundary, from which places the San Francisco seedsmen obtained their supply. In later years seeds were procured from localities east of San Bernardino, and from these originated the *W. robusta*. So far as I am able to judge from photographs and from the material in the Gray Herbarium, the palms of San Bernardino County are this species,

differing in just the respects noted above from the palm of Cantilles Cañon. It is very probable that the true *W. filifera* occurs also north of the boundary in the mountains bordering the Colorado River. In consequence of the demand for seeds of two species which collectors have not learned to distinguish, it is probable that seedsmen have not always been scrupulous in regard to the names under which the supply was distributed.

PELTANDRA UNDULATA, Raf. The *Arum Virginicum* of Linnæus, with which the common *Peltandra* of the Northern States has usually been considered identical, was a composite species, and both of its component parts are uncertain. The plant described in *Hort. Cliff.* was probably a cultivated one, said by Linnæus to have been of American origin, but it certainly could not have been from the United States, as the colors ascribed to it prove beyond doubt. His other reference under the species is to the plant described by Clayton in the *Flora Virginica* of Gronovius, and the identification here is rendered doubtful by Clayton's phrase, "radice tuberosa, Rapæ simili, fervida et acerrima." The root of *Peltandra* has no resemblance to that of a radish or turnip, nor is it hot or very acrid.

Rafinesque made his *P. undulata* the type of the genus, "having 3 to 5 seeds and probably the real *Arum Virginicum* of Clayton and Linnæus." Other species, as *P. Canadensis*, *P. latifolia*, *P. heterophylla*, etc., he described as having one or two or three seeds. The species, however, is exceedingly variable in many respects. Extreme forms received from Mr. A. Commons of Wilmington, Del., seemed to indicate that two species might perhaps be distinguished; but a study of the forms growing near Cambridge shows that no division can be safely made. The leaves vary from narrowly sagittate, with acute or acuminate or more or less obtuse lobes, to very broadly hastate, the broader forms either triangular or more or less elliptical in general outline. The spathe and spadix are more or less oblique at base, the former from 4 to 8 inches in length and the spadix from 2 to 6 inches, bearing from 20 to 80 pistillate flowers, the fertile portion being from 4 to 12 lines long. The ovaries contain 1 to 5 amphitropous ovules, and the short style bears a more or less oblique truncate stigma. The mass of fruit enclosed in the persistent base of the spathe is $1\frac{1}{4}$ to 3 inches long, the smaller with 1-seeded fruits about 4 lines in diameter, those of the larger often $\frac{1}{2}$ inch long or more and 1–3-seeded. The white staminodia among the ovaries are irregular in form and arrangement, distinct, and much shorter than the ovary, never united into a cup or nearly equalling it, as represented by Schott and usu-

ally described. I have seen no specimens in which the spadix was so very much shorter than the spathe as it is shown in Hook. Exot. Fl. t. 182, nor any in which its upper part was naked. The spathe is convolute either to the right or left. The rootstock is short and very thick, densely covered below with stout fleshy roots, and it is without acridity or nearly so.

Peltandra alba, Raf. This species was based upon the *Calla sagittifolia* of Michaux, the *Caladium glaucum* of Elliott, which has more recently been referred by Dr. Chapman (following Kunth's suggestion) to the *Xanthosoma sagittifolium* of the West Indies. It is clearly a *Peltandra*, though differing strikingly from *P. undulata* in the dilated and expanded white ovate blade of the spathe and in the reddish fruit. The more slender spadix is only half the length of the spathe, and its pistillate portion about as long as the sterile. The ovules appear to be always solitary. As in the last, the staminodia are distinct, but more nearly equalling the ovary. This is the *P. Virginica* of Schott, as described and figured by him, though in the figure the spathe is represented only partially expanded. It has been imperfectly understood by Dr. Engler, who in his *Araceæ* has confused it to some extent with the last, especially in the synonymy. It is confined to the southern coast, from Wilmington, N. C., to Florida, and is a pretty species, well worthy of cultivation. The generic characters as given by Bentham & Hooker and in Engler's revision require modification, as also in the Manual.

Ruppia occidentalis. Stems comparatively stout: sheaths elongated, 1 to 2 inches long or more: flowers as in *R. maritima*: fruit unknown. — In saline ponds near Kamloops, British Columbia; Prof. J. Macoun, June, 1889. The specimens are only in flower, but are remarkably unlike all forms of *R. maritima* in the length of the sheathing base of the leaf.

Eleocharis equisetoides, Torr. This species is referred by Boeckeler to the E. Asian *E. plantaginea*, from which it differs in the transversely linear reticulation of the nutlet. It also resembles the tropical American *E. interstincta*, R. Br., but has the nodes of the culm less crowded, the rather larger and more turgid nutlets less abruptly narrowed to the base, and the bristles shorter, very delicate and scarcely barbed. In *E. interstincta* the bristles are very stout and rigid, strongly barbed, and nearly a half longer than the nutlet.

Paspalum Elliottii, Watson in Gray's Manual, 6 ed., p. 629. The *Digitaria paspalodes* of Michaux is identified with what is known as *Paspalum distichum*, Linn., and with this must evidently go as

synonyms the *P. Digitaria* of Poiret and the *P. Michauxianum* of Kunth. Elliott supposed his *Milium paspalodes* to be the same as Michaux's plant, from which it is however distinct, as plainly appears from both his description and his figure. Failing to find any other species with which to unite it, I have given it the above name. As shown by Dr. Vasey, it belongs to Bentham's section *Anastrophus*.

Andropogon furcatus, Muhl. The name "*A. Provincialis*, Lam.," has recently been revived for this species, — a name which was also published by Retzius (Obs. 3. 43) in the same year (1783) and for probably the same grass. Lamarck's species was based upon what was said to be a grass of Provence in southern France, which had been described and figured by Gerard in 1761, but which Lamarck had not seen in flower. The synonyms that are cited by Gerard and Lamarck are known to belong at least in part to *A. Ischæmum*, Linn., a common species of southern Europe. But Gerard's figure and description do not apply well to any Provençal grass that has since been discovered, nor to any grass so nearly as to our *A. furcatus*. It appears certain that *A. furcatus* was in cultivation in several of the gardens of Europe at or before Lamarck's time, as specimens are found in the Herbarium at Paris, ticketed as reported from Provence, and in the Linnæan Herbarium, where in fact, according to Sibthorpe and Kunth, it stands for the type of *A. Ischæmum*. The plant cultivated at Paris in 1835 as *A. Provincialis* is minutely described by Kunth, and the flower figured, and this is beyond doubt *A. furcatus*. It is highly probable, therefore, that the original *A. Provincialis*, aside from its synonymy, and *A. furcatus*, are the same species. But were this absolutely certain, Muhlenberg's name should still be retained. *Andropogon Provincialis*, like *Asclepias Syriaca*, is a false name, and it cannot be justifiable to make a change for the sake of reviving and perpetuating an error.

Eragrostis campestris, Trin. Trinius cites as a synonym of this species *Poa nitida*, Ell., notwithstanding that Elliott describes his grass as having the spikelets on long pedicels and the axils glabrous, while the species of Trinius has the spikelets subsessile or very shortly pedicelled and the axils somewhat hairy. His description corresponds far more accurately with that of Elliott's "*Poa refracta*, Muhl.," which is considered by Dr. Chapman as a variety of *E. pectinacea*. It is distinct from that species in its more sparsely and divaricately branched panicle, the spikelets nearly or quite sessile along the branchlets, and the flowering glumes very acute or acuminate. It is also more glabrous, having only the throat of the sheaths

villous and the lower axils more or less bearded, the tuft reduced sometimes to only one or two hairs, as described by Trinius, the upper axils usually glabrous. The *Poa nitida* of Elliott appears to be a distinct species, having the branches of the panicle ascending, with the few spikelets terminal on long pedicels, and the glumes very acute, but less pointed than in *E. campestris*. It is wholly smooth and glabrous excepting the beard at the throat of the sheaths and a moderate roughness on the panicle and sometimes on the leaves. As the name *Eragrostis nitida* has been applied by Link to a different grass, this may be called E. Elliottii.

Glyceria grandis, Watson, l. c. 667. This grass has ordinarily been referred to *G. aquatica*, Smith (*Poa aquatica*, Linn.), of which it was made a variety by Torrey in his early publications. Recently it has been named *G. arundinacea*, Kunth, which is the same as *G. remota*, Fries. Our species differs from the last in its much stouter habit, larger, more erect and more branched panicle, the empty glumes broader, and the flowering glumes shorter, broader in proportion, and more obtuse. From *G. aquatica* it differs in its much narrower and smaller spikelets (2 or 3 lines long and 3–6-flowered), the more acute lower glumes, and the flowering ones more abruptly obtuse or truncate.

Puccinellia, Parl. (*Atropis*, Griseb.) Following Haekel, Thurber, and others, this genus is kept distinct from *Glyceria* in the revised Manual, especially as it is needed for a number of western species which are not satisfactorily referable to either *Glyceria* or *Poa*. Its separation leaves both these genera much more clearly defined. The name *Atropis*, which originated with Trinius, is credited by Grisebach for the genus to Ruprecht, Fl. Samoied. (1845). But reference to the place cited shows that while Ruprecht was strongly disposed to consider *Dupontia*, *Arctophila*, *Atropis*, *Catabrosa* and *Phippsia* as equally good genera, and even used *Dupontia* and *Arctophila* as generic names upon the plates of some new species, yet throughout his text and descriptions they are all alike treated as subdivisions of the genus *Poa*. The perplexity under which he labored is shown by the expression with which he closes his discussion of the possible genera, — "Nubes et inania captant, qui generibus solum student, nec speciebus simul cunctis." The genus was first definitely published by Parlatore in 1848 under the name of *Puccinellia*, and then by Grisebach in 1853 as *Atropis*.

2. *Descriptions of New Species of Plants, from Northern Mexico, collected chiefly by Mr. C. G. Pringle, in* 1888 *and* 1889.

THALICTRUM PRINGLEI. About two feet high, glabrous throughout, dioecious or subpolygamous: leaves once or twice ternate, petiolate; leaflets suborbicular, peltate, mostly large ($\frac{1}{2}$ to 2 inches in diameter), coarsely 5–9-toothed, not at all glandular: flowers in an open panicle, on slender pedicels, mostly nodding: anthers linear, long-apiculate: fruit compressed, nearly semicircular, strongly 3-nerved on the sides, 2 to $2\frac{1}{2}$ lines long, the elongated filiform stigma subpersistent: seed oblong, compressed, somewhat curved, shorter than the cell. — Slopes of the barranca near Guadalajara, Jalisco; June, 1889 (n. 2478).

DELPHINIUM MADRENSE. Stem slender, from a thickened root, simple or branched, 2 feet high or less, pubescent with reflexed hairs below, glandular-hispid above: leaves 3-parted, the lobes subpinnately 5–7-cleft into linear-oblong segments, the lowermost less cleft, the upper reduced: flowers few, pale blue, in a slender raceme, rather small, with a narrow straight spur; lateral petals long-villous: carpels short, glandular-hispid. — In the Sierra Madre, near Monterey; May, 1889 (n. 3014). Resembling *D. pauciflorum*, and characterized by its slender habit, glandular-hispid pubescence, straight slender spurs, and long-villous petals.

BOCCONIA LATISEPALA. Herbaceous annual, the stems many in a clump, 5 or 6 feet high; young branches and panicle glabrous: leaves broadly oblong, glaucous and nearly glabrous above, whitish-tomentose beneath, pinnately lobed to the middle, the sinuses rounded at base, the broad lobes obtuse or barely acutish, rather obscurely repand-dentate: sepals very broadly elliptical or nearly orbicular, 3 or 4 lines long, mostly longer than the rather stout pedicels: stamens 15: fruit nearly as in *B. frutescens*, 4 lines long, acutish at both ends, about as long as the stout stipe; style much shorter than the stigmas. — Collected in flower by Dr. E. Palmer at Guajuco, Nuevo Leon (n. 23 of 1880, *B. frutescens*, Watson in Proc. Amer. Acad. 17. 319, not of Linn.), and in fruit by C. G. Pringle (n. 1907 of 1888) on rich shaded slopes about the base and foothills of the Sierra Madre, south of Monterey.

BOCCONIA ARBOREA. A tree 15 to 25 feet high and sometimes 2 feet in diameter, with deeply cracked corky bark; young branches and base of the slender panicle tomentose: leaves glabrous above, rusty-tomentose beneath, especially on the midvein and nerves, ovate

to oblong-lanceolate, deeply pinnatifid, the narrow lobes very narrowly acuminate, the smaller leaves only toothed or nearly entire: sepals broadly oblong, acute, 4 lines long: stamens 10 or 15, the filaments mostly very short ($\frac{1}{2}$ to 1 line long): style as long as or longer than the stigmas; fruit (immature) erect, 2 to $2\frac{1}{2}$ lines long, equalling the stipe. — In rich mountain cañons near Lake Chapala, Jalisco; December, 1889 (n. 2445).

Capsella (Hymenolobus) stellata. Low and spreading, somewhat woody below, rather rigidly much-branched, canescent throughout with stellate pubescence: leaves narrowly oblanceolate, entire or obscurely few-toothed, 6 lines long or less: racemes sessile; flowers white: pods elliptical, somewhat obcompressed with deeply concave valves, stellate-pubescent, about $1\frac{1}{2}$ lines long and equalling the divaricately spreading pedicels; cells 3–4-seeded. — On limestone ledges in Carneros Pass, Coahuila; September, 1889 (n. 2844, 2848). Habit nearly that of *C. Mexicana*; style variable in length.

Alsodeia parvifolia. A much branched leafy shrub: leaves short-oblanceolate or narrow-rhombic, obtuse or acutish, cuneate at base, serrulate, glabrous or slightly pubescent on the nerves beneath, 3 to 15 lines long, usually much exceeding the nodes: flowers solitary in the axils, on pedicels 1 or 2 lines long, small (about a line long): fruit 2 lines long, the placentas 1-seeded. — In the mountains east of San Luis Potosi; 1890 (n. 3063). Remarkable for the numerous short nodes of the branches and for its small leaves.

Polygala Pringlei. Tall and slender ($1\frac{1}{2}$ or 2 feet high), closely resembling *P. paniculata*, but glabrous throughout, the raceme dense and narrowly cylindrical, and the smaller seed with a very minute hilum, nearly ecarunculate. — In wet places, plains of Guadalajara; October and November, 1889 (n. 2148, 2452). Distributed under the latter number as *P. paniculata*.

Drymaria longepedunculata. Annual, very slender, the elongated branching stems recumbent, clothed throughout with a soft villous pubescence: leaves thin, broadly ovate, apiculate or shortly acuminate, truncate to rounded or cuneate at base, 3 to 5 lines long: peduncles axillary, elongated (1 to 3 inches), 1–3-flowered: flowers large; sepals thin, oblong-lanceolate, 2 lines long; petals twice longer, deeply parted and cleft: capsule stipitate. — Under ledges of the barranca near Guadalajara; November, 1888 (n. 2121). Of the *D. gracilis* group.

Drymaria tenuis. Glabrous throughout, the stems very slender, from a slender branching rootstock, a foot long or less: leaves thin,

lanceolate to ovate-lanceolate, acute, cuneate at base, 2 to 5 lines long; stipules setaceous: peduncles terminal, capillary, 1–3-flowered: sepals very thin, lanceolate, acuminate, a line long; petals much shorter, bifid: capsule globose, sessile. — With the last (n. 2120).

Drymaria anomala. Annual, glabrous or subpuberulent, the slender stems diffusely much branched, a foot high: leaves thickish, nearly sessile, ovate to lanceolate, acute, cuneate at base, 2 or 3 lines long; stipules setaceous: flowers in broad diffuse cymes, sessile at the nodes: sepals herbaceous and somewhat rigid, a line long, the two outer larger and ovate, the inner lanceolate; petals small, bifid: stamens 3: capsule globose. — Carneros Pass, Coahuila; September, 1889 (n. 2847).

Hypericum paucifolium. Annual, glabrous, sparingly branched, a foot high or more, with a few distant pairs of narrowly linear leaves 3 to 9 lines long: flowers racemose along the branches and solitary in the forks, on short pedicels: sepals narrowly lanceolate, the orange petals twice longer: stamens about 40: capsule 1-celled, equalling the sepals ($1\frac{1}{2}$ to 2 lines long); styles elongated, distinct. — In the Sierra Madre near Monterey; June, 1888 (n. 2266). Related to *H. fastigiatum*.

Hypericum Pringlei. Perennial, erect, glabrous and glaucous, nearly 2 feet high, with numerous short slender lateral branches: leaves spreading, narrowly oblong to oblong-spatulate or oblanceolate, obtuse, lighter beneath, $\frac{1}{2}$ to $1\frac{1}{2}$ inches long: flowers in mostly small and close terminal cymes: sepals narrowly lanceolate, acuminate, 2 lines long; petals twice as long, remaining twisted over the capsule: stamens numerous: styles 3, distinct; capsule 3-celled, ovate, equalling the sepals. — In the Sierra Madre near Monterey; June, 1889 (n. 3012).

Malvastrum Schaffneri. A stout erect simple or somewhat branching perennial, 2 or 3 feet high or more, more or less densely stellate-pubescent throughout: leaves broadly ovate to ovate-lanceolate, subcordate at base, acute or acuminate, unequally serrate, 3 inches long or less, mostly hastately lobed, the short broad lobes rounded or acutish: flowers densely clustered in more or less compound axillary and terminal pubescent panicles, small: calyx 2 lines long or less, the acute deltoid lobes about equalling the white or whitish petals: carpels (10) small, nearly circular, smooth. — In the San Miguelito Mountains, near San Luis Potosi (n. 160 Schaffner, 1876); between San Luis Potosi and Tampico (n. 1036 Palmer, 1879, distributed as *M. vitifolium*); and at Carneros Pass, Coahuila

(n. 2849 Pringle, 1889). Remarkable for its numerous crowded small white flowers.

Oxalis Madrensis. Stems low and decumbent, from slender running rootstocks, branching, pubescent throughout: leaflets obovate, obtuse or usually slightly emarginate, equally short-petiolulate, $\frac{1}{2}$ inch long or less: peduncles axillary, slender, about equalling or exceeding the leaves, bibracteate, 1-flowered: sepals thin and subpetaloid, purplish, ciliate, oblong-lanceolate, obtuse, 3 or 4 lines long; petals yellow, 5 lines long: stamens all equalling the styles: capsule not exceeding the sepals: seeds few, finely 10-costate, the ribs acutely tuberculate. — In the mountains near Monterey, July, 1889 (n. 2867). Allied to *O. Berlandieri*.

SARGENTIA; new genus of *Rutaceæ* (*Xanthoxyleæ*). Flowers perfect, or ovary sometimes abortive. Calyx small, 5-parted. Petals 5, imbricate, orbicular, spreading. Stamens 5, at the base of a thick lobed hypogynous disk. Ovary very deeply 5-lobed, sessile upon the disk. Style central, simple; stigma small, entire. Fruit an oblong-obovoid drupe (or double, the two parts coherent by the inner face), with fleshy epicarp and thin crustaceous endocarp. Seed solitary, attached by a long hilum to the inner angle, exalbuminous. Cotyledons flat and thick; radicle superior, very short. — A small tree, with alternate palmately 3-foliolate evergreen leaves, and small flowers in narrow axillary and terminal panicles.

S. Greggii. Leaflets shortly petiolulate, oblong-obovate, obtuse or acutish, 1 to 3 inches long, glabrate, the petioles and nerves minutely puberulent: panicles shorter than the leaves, tomentulose: sepals orbicular; petals a line long, exceeding the stamens: fruit yellow, 9 lines long. — First collected by Dr. Gregg near Monterey in flower, in February, 1847, ticketed as "Chapote amarillo" and described as bearing a small edible fruit. It occurs abundantly in the cañons about the base of the mountains surrounding Monterey as a large shrub or small tree with smooth gray bark, which cleaves off much as in *Platanus*. It was collected by Mr. Pringle in fruit in June, 1888, and in 1889 in flower (n. 2416). The generic name is given in recognition of the botanical services of Prof. C. S. Sargent, Director of the Arnold Arboretum, through whose assistance Mr. Pringle has been enabled to successfully prosecute his explorations in northern Mexico.

Amyris Madrensis. Very finely and somewhat densely pubescent, with slender branches leaves pinnate, 2 or 3 inches long; leaflets 2 to 4 pairs, thick, dark green, very shortly petiolulate,

obliquely rhombic, obtuse or retuse, cuneate at base, obscurely crenulate or entire, 6 to 10 lines long, very finely pubescent beneath, nearly glabrous above: panicles small and slender, axillary, shorter than the leaves: young fruit somewhat pubescent, oblong-obovate, 2 or 3 lines long. — On limestone ledges in the mountains near Monterey; May and July, 1889 (n. 2093).

Decatropis Coulteri, Hook. f. Specimens of this species in immature fruit, collected by Mr. Pringle in 1889 (n. 2558), have the carpels sessile and distinct, coriaceous, semicircular or reniform in outline, doubly wing-carinate on the back, and about 2 lines long. The solitary reniform seed is apparently exalbuminous, and is attached to the middle of the inner angle of the cell. The plant is a slender shrub, 6 to 20 feet high, branching sparingly near the summit, and with evergreen foliage. It grows in open clumps on the limestone ledges of the mountains about Monterey, apparently spreading and propagating by its roots.

Bursera Pringlei. Glabrous throughout: petiole and very narrowly winged rhachis of the leaf slender and elongated (3 to 6 inches long); leaflets 5 to 12 pairs, rather thin and not rugose, linear-lanceolate and acuminate, serrate, 1 to 1½ inches long: racemes slender, 1 to 1½ inches long, 2–4-flowered, the curved pedicels 3 or 4 lines long: flowers unknown: fruit oblong-obovate, 3 lines long. — On rocky bluffs of the Rio Grande de Santiago near Guadalajara; October, 1889 (n. 2336). Near *B. Galeottiana*.

Bursera Palmeri, Watson, var. glabrescens. Leaflets 5 to 10 pairs, glabrous above or nearly so, very rugose, 6 to 10 lines long. — In the same locality (n. 2335).

Bursera pubescens, Watson, Proc. Amer. Acad. 24. 44, based upon foliage only, is proven by specimens collected during the past season by Brandegee and Palmer to be *Veatchia Cedrosensis*, Gray.

Thouinia acuminata. A tree (25 feet high) with slender branches, very minutely puberulent or glabrate: leaves 3-foliolate, the thin leaflets lanceolate, acuminate, narrowed at base, acutely serrulate, ciliolate, 2 to 4 inches long by 9 to 18 lines wide, about equalling the slender petioles: panicles slender, about equalling the leaves: flowers whitish, pedicellate, the stamens twice longer than the orbicular or round-obovate sepals and petals: fruit glabrous, the broadly divaricate wings 6 lines long. — In a barranca near Guadalajara; October, 1889, in flower; December, in fruit (n. 2485).

Thouinia Pringlei. Branchlets and petioles stout, tomentose: leaves trifoliolate; leaflets finely pubescent above, tomentose beneath,

rather coarsely crenate-serrate, acutish or obtuse, 1 to 3 inches long, the terminal rhombic-obovate and petiolulate, the lateral obovate or elliptical and sessile: panicle stout, tomentose, equalling the leaves: flowers nearly sessile: sepals and fruit pubescent; wings ascending, 6 lines long. — Same locality; December, 1889, in fruit (n. 2567).

Staphylea Pringlei. Resembling *S. trifolia;* lateral leaflets somewhat more rounded and unequal at base: capsule very broadly elliptical or nearly orbicular in outline, acute, 1½ to 2 inches long: seeds much larger (3 lines in diameter), dull, with a broad deep scar at base. — In cañons of the Sierra Madre, near Monterey; July, 1888, in fruit (n. 1936).

Lupinus ermineus. Perennial, stout and leafy, white throughout with very dense short-villous pubescence, appressed on the leaves and pods, elsewhere mostly spreading: leaflets usually 7, oblanceolate, acute, 15 lines long or less, somewhat shorter than the petioles: racemes nearly sessile, many-flowered, becoming much elongated; bracts linear, equalling the calyx, deciduous; pedicels very short (2 or 3 lines long in fruit): calyx scarcely gibbous at base, very villous, 3 lines long, the broad purple corolla 4 or 5 lines long: pod 6-seeded, an inch long by 3 lines broad. — Gravelly banks of streams near Zacatecas; October, 1888 (n. 1762). Near *L. Palmeri* and *L. niveus*, distinguished especially by the more villous character of the dense white pubescence.

Dalea capitata. Woody, diffusely much branched, a foot high, glabrous or slightly puberulent: leaves small, the 5 to 9 leaflets ½ to 1½ lines long, obovate, emarginate: spikes capitate, dense, on very short terminal peduncles; bracts broadly ovate, acute or short-acuminate, subpersistent, equalling the campanulate scarcely nerved pubescent calyx: calyx-teeth acute; petals yellowish, 3 lines long: pod pubescent, included. — At Carneros Pass, Coahuila; September, 1889 (n. 2378). With the habit of *D. frutescens.*

Brongniartia nudiflora. Shrubby, with the branchlets densely villous-pubescent and usually flexuous: leaves 4 or 5 inches long, of 4 to 6 pairs of oblong acute subcoriaceous and strongly reticulated leaflets, sparingly pubescent beneath and ciliate, 1 or 2 inches long; stipules deciduous: flowers apparently loosely racemose, in fascicles of 1 to 6, each fascicle subtended by a pair of thin villous semicordate stipule-like bracts; calyx and pedicels (each about ½ inch long) green and glabrous; corolla dark purple, 10 lines long: young pods glabrous, flat, attenuate below, 6–8-ovuled. — On rocky hills near Guadalajara; November and December, 1889 (n. 2128, 2980).

Desmodium (Chalarium) Guadalajaranum. Stem tall and stout, uncinate-hispidulous, as also the veins beneath the leaves and the inflorescence: upper leaves unifoliolate (lower unknown), subcoriaceous, very shortly petiolate, ovate-lanceolate, acute, rounded at base, strigulose, reticulate beneath, 2½ inches long; stipules semi-ovate, acuminate; stipels linear: flowers small, in diffuse terminal and axillary panicled racemes, the slender pedicels 3 to 5 lines long; bracts caducous: legumes glabrous, 1–4-jointed, equally indented both sides, the suborbicular dark-colored joints 1 or 2 lines long. — In cañons near Guadalajara; November, 1889 (n. 2829).

Cologania Pringlei. A low twiner, reflexed-hispid: leaflets oblong, or the odd one oblong-ovate, obtuse and apiculate or retuse, rounded or subcordate at base, villous with scattered appressed hairs, 1 to 2½ inches long: pedicels 2 to 4 in the axils or umbellate on a short peduncle (or near the base sometimes scattered upon an elongated peduncle), about equalling the calyx (4 lines long): corolla purple, 8 lines long: pod linear, straight, densely pubescent, 1½ or 2 inches long by 2½ lines wide. — Jalisco (n. 2788).

Bauhinea (Casparea) Pringlei. A shrub, 15 to 20 feet high: leaves suborbicular (3 inches long or more), on petioles an inch long or more, cordate at base, 9-nerved, cleft to below the middle, the sinus nearly closed by the contiguous obtuse lobes, nearly glabrous above, sparingly ferruginous-pubescent beneath: racemes axillary, rather many-flowered, becoming elongated: calyx puberulent, 8 lines long, exceeding the pedicel; petals 15 lines long, whitish with a purple stripe down the middle, narrowly oblong-lanceolate, the claws pubescent: sterile filaments bearded, the fertile stamen much shorter than the petals: pistil equalling the petals; fruit unknown. — On cool cliffs of the barranca near Guadalajara; 1888 (n. 1722).

Acacia glandulifera. A rigidly branched shrub with dark-colored bark: stipular spines divaricate, slightly curved, terete, 3 lines long: leaves very short, of one or rarely two pairs of pinnæ, somewhat puberulent; leaflets 5 to 7 pairs, thickish, linear-oblong, 1 to 1½ lines long: flowers capitate on axillary peduncles 3 or 4 lines long: pods coriaceous, dehiscent, linear, more or less torulose, covered with short rigid gland-tipped processes, 1¼ to 2½ inches long and 3 lines broad, 3–6-seeded. — At Carneros Pass, Coahuila; September, 1889 (n. 2861). Nearest to *A. constricta*.

Acacia Tequilana, Watson, Proc. Am. Acad. 22. 409. Pod thin and flat, straight, 1½ or 2 inches long by 3 lines broad, atten-

uate to a stipe ½ inch long, 3–7-seeded. — Collected in fruit by Mr. Pringle on hillsides near Guadalajara; October, 1889 (n. 2998).

Sedum diffusum. Stems short, from a widely spreading branched fleshy underground rootstock, sparingly branched, glabrous, very leafy: leaves alternate, sessile or clasping, narrowly oblong, obtuse, 2 to 4 lines long: flowers in simple terminal loose elongated spikes; bracts mostly shorter than the flowers: sepals short, ovate, obtuse: petals white, twice longer, narrowly oblong, acute: stamens 10, very short: carpels becoming widely divergent above the broad base. — On dry limestone ledges in the Sierra de la Silla near Monterey; May and June, 1889 (n. 2273, 2509).

Sedum Jaliscanum. Annual, slender, loosely branching from near the base, glabrous, 2 to 4 inches high, the lower branches elongated and subdecumbent: leaves scattered, rather thin, ovate and narrowed to a long petiole (in all 9 to 12 lines long), becoming more or less narrowly oblanceolate and gradually reduced and narrowed above: flowers solitary in all the axils, very shortly pedicellate: sepals narrowly linear, nearly equalling the linear-lanceolate acuminate white petals (1½ lines long), exceeding the carpels: stamens 10, the very slender filaments about equalling the petals: carpels erect or slightly spreading. — On shaded mossy rocks near Guadalajara; September and October, 1889 (n. 2192, 2451). Very peculiar among American species in its habit.

Sedum Alamosanum. Perennial, the rootstock densely branched and sending up numerous crowded stems at first clavate with the densely imbricated foliage, at length more elongated (3 or 4 inches long) and the leaves more scattered: leaves puberulent, terete, linear-oblong, 1½ to 2 lines long: inflorescence unknown. — Under shelving rocks in the Alamos Mountains, Sonora; Dr. Edward Palmer, 1890. A very peculiar species, much like *S. Greggii* in habit, but differing in its foliage.

Cotyledon Pringlei. Stems stout, decumbent, a foot long or more, very leafy and branching: leaves (and branches) puberulent, rather thin, broadly oblanceolate, acute, mostly 1 or 2 inches long: racemes simple, terminal, the foliaceous bracts nearly equalling the flowers; pedicels 2 to 4 lines long: sepals narrowly lanceolate, acuminate, as long as the corolla (6 to 8 lines); petals united only near the base, red, very acutely and prominently carinate, acuminate: stamens a third shorter. — On dry shaded ledges of the barranca near Guadalajara; 1889 (n. 1853).

Myriophyllum Mexicanum. Stems stout: floral leaves narrow, pectinately pinnatifid or toothed, in whorls of 4 to 6, or in alternate

half-whorls, or scattered: flowers perfect; petals pink, orbicular, deciduous: stamens 4, with small elliptical anthers: fruit a line long, smooth, the narrow carpels rounded or acutish on the back. — In ponds in cañons of the Sierra Madre, Chihuahua; October, 1889 (n. 2017). Nearest to *M. ambiguum*, from which it differs in its stouter habit, broader petals (and flower-buds), shorter anthers, and larger fruit.

Cuphea (Diploptychia) Pringlei. Tall (2 or 3 feet), very scabrous, slender: leaves opposite, narrowly lanceolate, acuminate, cuneate at base, 2 or 3 inches long, those on the branchlets much smaller and the upper cauline narrowly linear: flowers in a terminal glandular-hispid panicle, on slender alternate or opposite pedicels; calyx scarlet, narrow, 9 or 10 lines long, strongly gibbous at base, the teeth nearly equal; dorsal petals bright scarlet, oblong-obovate with a short claw, 5 lines long, the ventral minute: stamens 11, 4 shortly exserted: disk thick and pyramidal, suspended from the base of the ovary: seeds about 30. — In mountain cañons near Lake Chapala; December, 1889 (n. 2424). A very showy species, near *C. cordata* of Peru and Colombia.

Begonia uniflora. Stem thick and fleshy from a small tuberous root, procumbent, a foot long or less, smooth and glabrous or somewhat verrucose: leaves thin and nearly glabrous, round-cordate, palmately 7-nerved, the margin dentately 7–11-lobed and sparsely toothed or denticulate, the teeth and sinuses often setulose, $2\frac{1}{2}$ inches broad or less; stipules ovate-lanceolate, laciniately toothed; petioles (except the radical ones) shorter than the blade, bristly at the summit: peduncles axillary, 1-flowered; bracts ovate: flowers glabrous, rose-color, the staminate 2-petalous, the pistillate 5-lobed: stamens monadelphous, the orbicular anthers shorter than the filaments: ovary nearly equally 3-winged. — In the Sierra Madre near Monterey; August, 1889 (n. 2885). Probably of the section *Kniesbeckia*, but the ovary of the single pistillate flower was not in good condition for examination.

Passiflora suberosa, Linn., var. longipes. Glabrous and very slender: leaves very thin, on very slender petioles 6 to 18 lines long, deeply 3-lobed, the narrow and nearly equal lobes acute or acuminate. — In the barranca near Guadalajara; September, 1889 (n. 2966).

Apodanthera Pringlei. Stems slender, usually prostrate and rooting, scabrous: leaves thin, scabrous both sides, triangular-ovate, 1 to 3 inches long and nearly as broad, cordate at base with a deep

closed sinus, mostly hastate with broad rounded or truncate and usually sinuate lobes, the middle lobe acute: staminate flowers minute and very few, clustered on very short peduncles, green, hispid, tubular-campanulate, shortly toothed: anthers oblong, nearly straight: pistillate flowers in separate axils; corolla open-campanulate with spreading 5-cleft margin, about 3 lines long; ovary narrowly oblong, 4 lines long, exceeding the peduncle, obtusely quadrangular, slightly hispid on two opposite sides; placentæ 4 (as in *A. Palmeri*), many-seeded. — Under ledges near Guadalajara; November, 1888 (n. 2140).

Mamillaria (Ancistracanthus) furfuracea. Tubercles flattened at base (about 15 lines broad), triquetrous above, carinate beneath, the triangular terminal surface (about an inch broad by ½ inch) mamillate and (as also the lower surface) minutely furfuraceous-punctulate, the apex terminating in a suborbicular tomentulose areola (becoming naked): the centre a mass of silky-villous hairs, which persist in the axils of the tubercles: flowers 12 to 15 lines long, the inner petals (9 lines long) white or pinkish, the sepals brownish. — At Carneros Pass; September, 1889 (n. 2580).

Prionosciadium Watsoni, Coulter & Rose, in herb. At the time of the description of this genus with its three species (Proc. Amer. Acad. 23. 275) the specimens of *Peucedanum Mexicanum* (l. c. 17. 361), from near San Luis Potosi, were overlooked. Examination shows this to be a fourth species, as has been noted in the Gray Herbarium by Prof. Coulter and Mr. J. N. Rose, who have named it as above. Fruiting specimens collected by Mr. Pringle near Guanajuato in 1888 (n. 2298) were distributed under this name, and it was again found by him in October, 1889, near the same locality (n. 3002). These are the same as Dr. Palmer's n. 275 from the same region, in very young fruit, which was unfortunately named at a venture *Cicuta* (?) *linearifolia* (l. c. 22. 415). It now appears that the species is very variable in its foliage, the leaflets ranging from elongated linear and serrate to lanceolate and laciniately dissected. The fruit also varies in the character of the epicarp, which is usually thin but sometimes quite corky. The vittæ are nearly contiguous about the seed.

Peucedanum (?) Madrense. Acaulescent (?), glabrous; root-stock thick and branching, apparently perennial: basal leaves large, on long stout sheathing petioles, twice ternate or ternate-quinate; leaflets ovate, sharply serrate, more or less lobed, 1 or 2 inches long: rays about 12, an inch long or more: fruit oblong-ovate, 6 lines long

by 3 broad, rather strongly 3-ribbed on the back, the thin lateral wings as broad as the seed; commissural face usually more or less strongly 2–3-nerved, with 4 to 6 vittæ; dorsal vittæ 4, with some smaller intermediate ones: seed more or less deeply concave, somewhat channelled on the back beneath the broad vittæ. — In the Sierra Madre, near Monterey; June, 1888 (n. 2211). Differing from most American species in the more than usually channelled seeds, on both the ventral and dorsal sides, and in the nerved commissure.

RHODOSCIADIUM, n. gen. of Peucedanoid *Umbelliferæ*. Calyx-teeth minute. Stylopodium depressed-conical upon a rather prominent undulately margined disk. Fruit orbicular, flattened dorsally, and with broad thin lateral wings; dorsal ribs 3, thickened filiform, and often 2 shorter and much less prominent on each side of these; commissure strongly nerved in the middle; vittæ nearly contiguous about the seed, 8 on the commissure, the dorsal as many or more. Seed somewhat concave on the face. — Tall and slender, with pinnately compound leaves, small few-rayed umbels in nearly naked lateral and terminal panicles, and dull reddish flowers; involucres and involucels of a few linear bracts.

R. Pringlei. Glabrous throughout; cauline leaves ample, bipinnate with the divisions laciniately pinnatifid; those on the branches reduced to linear bracts dilated at base: rays 3 to 5, 3 to 5 lines long: fruit nearly sessile, 3 lines long. — On hillsides near Guadalajara; October, 1889 (n. 2981). The genus is peculiar in its habit, most nearly related in its fruit to *Tiedemannia*. The generic name has reference to the color of the flowers, and is also commemorative of the services of Mr. J. N. Rose, of Washington, who has done so much, in connection with Prof. Coulter, to elucidate the American representatives of the order.

Oreopanax Jaliscana. A small tree (20 feet high), with stout branches, rather sparingly furfuraceous- and stellate-pubescent: leaves cordate at base, 5-lobed to the middle, the lobes acute, mostly somewhat sinuately toothed or lobed, the petiole about equalling or shorter than the blade (4 to 10 inches broad): racemes in a broad open panicle (1 to 1½ feet broad); flowers in dense heads subtended by tomentose ovate bracts as long as, or exceeding, the ovaries: corolla spreading or calyptrately deciduous: filaments filiform: ovary 1–3-celled, with as many slender styles; fruit subglobose, 1–3-celled, black at maturity: albumen strongly ruminate. — In a barranca near Guadalajara; 1888 (n. 1822), and 1889 in fruit (n. 1889). Resem-

bling *O. Salvinii*, Hemsley, and like it peculiar in the reduced number of ovary-cells.

Gonzalea glabra. A small tree (20 feet high), glabrous throughout: leaves oblong-lanceolate, acute or acuminate, cuneate at base on a petiole about ½ inch long, entire, 2 to 4 inches long; stipules caducous: spike-like racemes slender, many-flowered, the pedicels very short: calyx campanulate, truncate or sinuate-dentate; corolla 1 or 2 lines long, with a broad tube and spreading rounded lobes, white or purplish: fruit unknown. — In the mountains near Lake Chapala; December, 1889 (n. 2442). Flowers fragrant.

Randia tomentosa. Branchlets armed at the extremity with four stout spreading spines 3 or 4 lines long: leaves narrowly ovate to oblong-ovate or oblanceolate, acute or acutish, attenuate below into a short petiole, tomentose both sides, greener above, 2 to 4 inches long: fruit terminal on the branchlets and sessile, pubescent, globose and short-stipitate, 1½ inches in diameter. — In the Sierra de la Silla, near Monterey; August, 1889 (n. 2865). Flowers unknown.

Crusea cruciata. Annual; stem simple, erect, few-jointed, compressed, sparsely retrorsely hispid on the angles, otherwise glabrous: leaves narrowly lanceolate, acuminate, 2 to 2½ inches long, the uppermost dilated and ciliate at base, as are also the similar but smaller floral bracts: flowers in most of the axils, the very short pedicels subtended by a circle of bristles; calyx-lobes triangular-subulate, a line long, nearly equal: fruit didymous, the cocci separating from a bifid axis, minutely and closely tuberculate, a line long or more. — Barranca near Guadalajara; October, 1889 (n. 2969).

Crusea villosa. Annual, erect, slender, about a foot high, sparingly branched, scabrous: leaves linear-oblanceolate, acuminate, ½ to 1½ inches long, the uppermost subtending a sessile dense rather few-flowered head; floral bracts large and rigid, dilated at base and copiously white-villous within, abruptly herbaceous-tipped: calyx-lobes 4, linear, less than a line long, about equalling the minute white corolla: fruit a line long, 2-coccous, somewhat compressed, the oblong-obovate cocci separating from a narrow linear axis. — On rocky hillsides near Guadalajara; October, 1889 (n. 2448).

Spermacoce Pringlei. Annual, erect, sparingly branched, about a foot high, glabrous nearly throughout: leaves oblong-ovate, acute, narrowed below to a short petiole, scabrous on the margin, 1½ inches long or less; stipules reduced to a row of slender bristles: flowers very small, in dense axillary clusters: fruit glabrous, less than a line long, oblong-elliptical, crowned by the small linear-subulate

erect calyx-teeth: seed smooth. — Shaded hillsides near Guadalajara; September, 1889 (n. 2464). With the habit of *S. glabra*.

JALISCOA; new genus of *Eupatoriaceæ*. Heads few-flowered. Involucres oblong-campanulate, its scales few, in two rows, nearly equal, narrowly oblong, strongly concave, scarcely nerved. Receptacle small, paleaceous, the caducous paleæ resembling the involucral scales and embracing the achenes. Corolla gradually dilated above the narrow base, 5-toothed. Anthers short-appendaged, obtuse at base. Style-branches somewhat papillose. Achenes glabrous, linear, 4-angled, the angles thickened and the truncate apex dilated. Pappus none. — Suffrutescent, erect and branched; leaves opposite at least on the branches, petiolate, dentate, sub-triply nerved; heads small, in terminal corymbs or corymbose panicles; flowers white.

J. Pringlei. Much branched and nearly glabrous, 6 to 8 feet high: leaves ovate to lanceolate, acuminate, cuneate at base, 2 to 4 inches long, minutely pubescent as well as the inflorescence: heads numerous, 1½ lines long, about 10-flowered, the exserted corollas as long. — Talus of cool ledges, bluffs of the Rio Grande de Santiago, Jalisco; October and November, 1889 (n. 2198 and 2491). The genus is near *Alomia* and *Aschenbornia*, distinguished especially by the narrow concave scales and chaff embracing the achenes.

Ageratum (Cœlestina) callosum. Perennial, the herbaceous ascending stems about a foot high, floccose-pubescent throughout; branches spreading: leaves thin, ovate, rounded or subtruncate at base, acute, crenately serrate, 2 inches long or less, much exceeding the petioles: heads in small terminal corymbs; involucre 2 lines long, nearly glabrous, the narrow usually purplish scales 2–3-nerved below; receptacle nearly flat: corolla white, glabrous: achenes very small (scarcely ½ line long), slightly scabrous on the angles, with a prominent subglobose basal callus; pappus an entire cup-shaped crown with incurved margin. — On wet cliffs near Guadalajara; December, 1888 (n. 2166). With the habit of *A. conyzoides*.

Heliopsis filifolia. Herbaceous, branching from the base, glabrous, a foot high or more: leaves filiform, 2½ inches long or less, opposite and fascicled, the upper alternate: involucre broadly campanulate, slightly pubescent, the oblong nerved scales acutish: ligules elliptical, 3-toothed, 3 or 4 lines long: achenes glabrous, obtusely tetragonal, truncate, strongly tuberculate. — On limestone hills at Carneros Pass, Coahuila; September, 1889 (n. 2396).

Zaluzania resinosa. Tall and stout, the angled stem and branches loosely tomentose or glabrate: leaves broadly rhombic-

ovate (6 inches long by 4 broad) to lanceolate upon the branches, short-acuminate, narrowed at base to a short stout petiole, subcrenately serrate, roughish-puberulent above, thinly tomentose beneath and with numerous minute resinous globules: heads corymbose on short pedicels; outermost involucral scales herbaceous, the rest thin, elliptical, obtuse, many-nerved: rays 3 or 4 lines long: achenes large for the genus (1½ lines long). — In the Sierra Madre near Monterey; August, 1889 (n. 2412).

Wyethia Mexicana. Woody at base, 3 to 5 feet high, rather slender, rough-hispid: leaves thin, alternate, slenderly petiolate, ovate or the upper lanceolate, cordate or the upper rounded at base, short-acuminate, soft-tomentose beneath, scabrous and subpubescent above, 3 or 4 inches long: heads on axillary and terminal peduncles, ½ inch high; involucre campanulate, of several rows of rather rigid-based bracts with long foliaceous acuminate tips; ray-flowers pistillate, numerous, the narrow ligules 9 lines long: achenes small (scarcely 2 lines long), obtusely quadrangular with the sides sulcate; pappus of several unequal acute or acuminate rigid persistent scales united at base. — Grassy foothills of the Sierra Madre near Monterey; June, 1888 (n. 1923). Rather abnormal in habit and involucre, but the achene, though small, and pappus are wholly those of the genus.

Perymenium album. Suffrutescent, the branches hispidulous-scabrous: leaves rather narrowly lanceolate, very shortly petiolate, acuminate, rounded or cuneate at base, entire or sparsely serrulate, very scabrous above, pubescent beneath, 1 to 2½ inches long: heads few in terminal corymbs and solitary on short lateral branchlets, the short stout peduncles pubescent; involucral scales lanceolate, acutish, pubescent: rays white, very broadly obovate, 2 lines long, crenately few-toothed: achene subtetragonal; pappus-bristles distinct. — In the mountains near Lake Chapala; December, 1889 (n. 2438).

Chrysactinia truncata. Suffrutescent, low, much branched, the slender herbaceous branches short (2 or 3 inches), glabrous: leaves opposite or alternate, pinnately divided, the segments (1 to 3 pairs) cuneate, entire or with a lateral tooth, truncate, mucronate, the mucro bearing a prominent gland (the leaves otherwise glandless): peduncles terminal, short: involucral scales 12, two lines long: rays bright yellow: achenes, pappus, corolla, style-branches, etc., as in *C. Mexicana*. — Summit ledges of the Sierra de la Silla, Nuevo Leon; June, 1889 (n. 2601).

Chrysactinia pinnata. Glabrous throughout or nearly so; stems herbaceous, erect, slender, branching, a foot high or more:

leaves opposite, sparsely glandular-dotted, narrowly lanceolate, 1 to 2½ inches long, pinnately divided squarely to the midvein, the segments (4 to 10 pairs) acute, the lowermost usually much narrower: heads on slender peduncles; involucral bracts 8, three lines long: rays bright orange: flowers and achenes closely resembling those of *C. Mexicana*. — On limestone ledges of mountains near Monterey; May, 1889 (n. 2524). These species are certainly congeneric with *C. Mexicana*, though very different in habit.

Pectis (Pectothrix) bracteata. Perennial, the caudex much branched, with the habit of *P. longipes* but somewhat taller: leaves very narrow (almost filiform), 1 to 3 lines long, pungent, without setæ at the base and rarely with 1 or 2 lateral lobes: peduncles elongated, bracteate: involucre broad, the oblong scales (10 to 15) broadly thickened below: rays white: achene 1½ lines long, very finely striate and minutely tuberculate, hispidulous only at the base and summit; pappus of about 15 bristles, narrowly paleaceous toward the base. — On calcareous hills at Carneros Pass, Coahuila; September, 1888 (n. 2403).

Senecio Chapalensis. Soft-shrubby, resembling a *Pelargonium* in habit: leaves thin, long-petiolate, peltate (the petiole attached about ½ inch above the base), orbicular or subtriangular in outline, acutely 5–7-lobed with shallow obtuse sinuses, denticulate by excurrent veinlets, puberulent both sides, 4 inches broad or less: panicle puberulent, loose, the bracts lanceolate or oblanceolate to linear; peduncles slender, an inch long or less, straight: involucral bracts 8, 3 or 4 lines long: rays 5, bright yellow; corolla-lobes not half the length of the throat. — In the mountains near Lake Chapala; December, 1888 (n. 2419). This species closely resembles *S. subpeltatus*, Schultz Bip. (*Cacalia penduliflora*, Gray), of which it might be considered a radiate variety, but which is nearly or quite glabrous, with peltate bracts, more slender pendulous peduncles, and longer involucral scales. The corollas are the same in both.

Senecio Montereyana. Perennial (?) with a short branching rootstock, more or less densely white-floccose-tomentose throughout; stems slender, a foot high, naked above, bearing a few (4 to 6) long-peduncled heads: leaves mostly near the base, petiolate, 4 to 6 inches long by an inch wide, pinnately parted into numerous cuneate to oblong coarsely few-toothed lobes: involucre 3 lines long, tomentose, the scales narrowly acuminate: achenes finely pubescent. — On dry shaded ledges, near Monterey; June, 1888 (n. 1922).

Cacalia Pringlei. Tall and rather slender, glabrous or nearly so: radical leaves long-petiolate, ample, the blade (a foot long) broadly elliptical in outline, deeply pinnatifid with rounded sinuses, the 4 or 5 pairs of lobes again similarly pinnatifid, their few segments mostly coarsely toothed: bracts of the broad loose panicle narrowly lanceolate, entire or sparingly toothed: heads 3 or 4 lines long, about 12-flowered, the campanulate involucre of 8 broad acute bracts 2 or 3 lines long: corolla cleft nearly to the middle: achenes pubescent. — On grassy slopes of the barranca near Guadalajara; November, 1888 (n. 1749, 1811). The foliage is much as in *C. sinuata*, but the involucral scales are shorter and broader, and panicle much more open.

Cnicus Pringlei. Tall and slender, branched above: leaves greenish above, densely white-tomentose beneath; the lower a foot long or more, petiolate, deeply pinnatifid, the narrow segments with 1 to 3 lateral lobes, rather sparsely spinose with slender prickles; the upper sessile and clasping: heads small (about an inch long), solitary or in pairs; involucre nearly glabrous, the very unequal narrow scales with a prominent black viscid midvein, the lower with an appressed short spine, the upper with slightly rigid attenuate tips: corolla purple: anthers acutely appendaged. — In the Sierra Madre near Monterey; 1889 (n. 2507). Of the *C. altissimus* group, marked by the black scales without spreading setiform prickles.

Perezia grandifolia. Stout and tall (6 to 10 feet high), glabrous: cauline leaves thin, large (some a foot long by 8 inches broad), sessile with a broadly auriculate base, obovate, obtuse, sharply repand-serrulate; floral leaves small, oblong with auriculate base, acute: panicle broad, open, glandular-puberulent and viscid, the small 10–12-flowered heads (6 lines long) on slender peduncles: involucral scales herbaceous, linear-lanceolate, acuminate, in few series, passing downward into the bracts of the pedicel: achenes glabrous. — On cool rocky hillsides near Guadalajara; 1889 (n. 1858). Of the *P. Thurberi* group, as arranged by Dr. Gray.

Perezia capitata. Slender (5 to 8 feet high), widely branching, leafy, somewhat finely pubescent: leaves thickish, rigid, rhombic-ovate to lanceolate, acuminate, cuneate or the upper rounded at base, sessile or very nearly so but not at all amplexicaul or auriculate, the cauline 3 to 5 inches long by 1 to 3 broad: heads sessile in terminal clusters, 5-flowered, 4 or 5 lines long; involucral scales rather few, narrow, acuminate: achenes puberulent. — On warm rocky hillsides near Guadalajara; 1888 (n. 1859). With *P. Seemanni*, as grouped by Dr. Gray, but very different in habit and other characters.

TRIXIS HYPOSERICEA. Shrubby, slender, much branched, the branchlets finely pubescent: leaves linear-lanceolate (2 or 3 inches long by 3 or 4 lines broad), attenuate above, narrowed below to a short petiole, entire, green and nearly glabrous on the upper surface, appressed silky-villous beneath: inflorescence very open, the heads on slender nearly naked peduncles; involucre of 8 finely pubescent acutish scales in one row, 4 lines long, with 2 or 3 short linear spreading bractlets at base: receptacle very villous: achenes densely puberulent. — In the barranca near Guadalajara; 1888 (n. 1741).

LOBELIA SUBLIBERA. Biennial (?), erect and branching, 1 or 2 feet high, very finely roughish-pubescent: early radical leaves ovate to elliptical, glandular-serrulate, the cauline distant, linear-lanceolate, acuminate, acute at base, sparingly denticulate: racemes long-pedunculate, mostly few-flowered, secund; bracts very small, linear; pedicels 2 to 6 lines long: calyx-tube almost none, the linear-acuminate lobes (2 lines long) upon a very abrupt base: corolla blue, with tube 5 lines long, and the broad lobes of the limb rounded and obtuse: capsule free from the calyx excepting the very short acute base, ovate, 3 lines long. — On cool shaded slopes of the Sierra Madre near Monterey; July, 1888 (n. 1889).

LOBELIA PRINGLEI. Stems numerous from an apparently perennial rootstock, branching at base and leafy below, finely pubescent throughout: leaves ovate, acutish or the lowest very obtuse, the margin slightly sinuate or entire, 6 to 9 lines long, about equalling the winged petiole: peduncle naked, bearing a loose rather few-flowered raceme (a foot high); bracts linear; lower pedicels about an inch long: calyx turbinate, about half the length of the linear lobes, which equal the tube of the blue corolla (3 or 4 lines long). — On limestone ledges near Monterey; June, 1889 (n. 2538).

CLETHRA PRINGLEI. A tree 25 to 40 feet high: leaves oblanceolate, acuminate, obtuse at the narrow base, entire or sparsely serrate, glabrous above, tomentulose beneath, 3 or 4 inches long by 1 to $1\frac{1}{2}$ broad, short-petiolate: inflorescence a terminal sessile racemose panicle, hoary-tomentulose throughout; racemes slender, elongated (4 to 6 inches long); pedicels slender, 3 or 4 lines long: flowers small; sepals acuminate, $1\frac{1}{2}$ lines long; petals roundish, shortly fimbriate: style equalling the calyx. — In the mountains east of San Luis Potosi; June, 1890 (n. 3098).

FORESTIERA TOMENTOSA. Branches and leaves (especially beneath) densely tomentose: leaves entire, subcoriaceous, oblong-ovate, cuneate at base, acutish or obtuse, 9 to 12 lines long, very shortly

petiolate: pedicels umbellately clustered, 2 to 4 lines long: drupes narrowly oblong, curved, rounded at base, 3 to 5 lines long. — Hills near Guadalajara; May, 1889, in fruit only (n. 3021). Near *F. pubescens*, but with thicker and more tomentose entire leaves and with longer and more oblong curved drupes.

Forestiera racemosa. A tall evergreen shrub or small tree (10 to 20 feet high), forming clumps: leaves rather thin, ovate to lanceolate, acute or short-acuminate, acutish at base, entire or serrulate, puberulent above and thinly tomentose beneath or glabrate, 9 lines to 2 inches long, on slender petioles 2 or 3 lines long: flowers pedicelled, opposite in very short racemes (the fertile racemes about 6 lines long in fruit); calyx of pistillate flowers minute, persistent: fruit globose, 2 to 2½ lines in diameter; putamen smooth. — At the base of the Sierra Madre near Monterey; August, 1889 (n. 2394).

Metastelma multiflorum. Glabrous or nearly so (the petioles and inflorescence somewhat pubescent): leaves linear to linear-lanceolate, acuminate, obtusish at base, shortly petiolate, 6 to 10 lines long or usually less, much reduced on the branches: flowers clustered in most of the axils, a line long, the pedicels mostly shorter than the calyx: calyx-lobes short, acute; corolla greenish white or tinged with purple, the oblong acute lobes puberulent within: column as long as the anthers; lobes of the crown inserted at the base of the anthers, linear-lanceolate, exceeding the stigma. — Twining over shrubs in ravines near Guadalajara; November, 1888 (n. 1776). Allied to *M. Schaffneri* and *M. angustifolium*.

Marsdenia Pringlei. Somewhat puberulent: leaves nearly glabrous, oblong-ovate, acute or abruptly short-acuminate, obtuse at base, 2 to 4 inches long, on petioles 6 to 12 lines long: peduncles a little shorter than the petioles, few–many-flowered, the pedicels 1 to 3 lines long: sepals ovate; corolla white, 3 or 4 lines long, cleft to below the middle, glabrous: divisions of the crown distinct, tipped with a broad triangular appendage slightly exceeding the broad obtuse and entire tip of the anther: stigma terminated by a long-exserted attenuate beak, bifid at the apex, 2 lines long: fruit unknown. — In the Sierra de la Silla, near Monterey; June, 1889 (n. 2531).

Omphalodes Mexicana. Stems procumbent, from a perennial branching rootstock; canescent throughout with fine spreading pubescence: leaves ovate, acute, subtruncate or subcordate at base, 3 to 8 lines long, shorter than the petioles; floral bracts more or less cuneate at base and mostly sessile: pedicels elongated (6 to 12 lines), in long terminal racemes: corolla white (3 lines broad), with very

prominent erect appendages at the throat: lobes of the ovary nearly horizontal upon the broad flattish gynobase; only 1 or 2 nutlets usually maturing, attached by a broad ovate scar from above the base to near the apex, round-ovate, 1½ lines long, the marginal wing strongly involute, denticulate. — In fissures of dry limestone rocks in the Sierra Madre near Monterey; June, 1888 (n. 1878). Evidently a congener of the plants collected by Dr. Palmer in the same region and referred to this genus by Dr. Gray (*O. aliena* and *cardiophylla*).

Brachistus Pringlei. Shrubby (?) with herbaceous virgate branches, finely pubescent throughout: leaves mostly geminate, ovate to lanceolate, acute or short-acuminate, rounded at base on a short margined petiole, 1 to 2½ inches long, one of the pair much smaller: pedicels solitary or in pairs in the axils, about 6 lines long: calyx small, truncate, with a linear tooth at each angle as long as the tube; corolla campanulate, plicate-angled, 3 lines long: fruit depressed-globose, 2 or 3 lines broad. — In the Sierra de la Silla near Monterey; May, 1889 (n. 2544).

Berendtia spinulosa. Shrubby, with rigid branches, the upper branchlets developing into short spines, leafy, finely glandular-hispid throughout: leaves oblanceolate or oblong-oblanceolate, acute or acutish, cuneate at base and sessile or nearly so, entire or sparingly toothed, 9 lines long or less: pedicels mostly solitary in the upper axils, about equalling the leaves: calyx 3 lines long, with short acute teeth; corolla yellow, ½ inch long, with ample limb: anthers very small: capsule lanceolate, 2 lines long. — On dry limestone cliffs of the Sierra Madre near Monterey; June, 1888 (n. 1952). Near *B. Coulteri.*

Gratiola (Sophronanthe) Mexicana. Annual, slender, loosely branching, 3 or 4 inches high, glabrous or nearly so: leaves oblong-ovate, acute, spreading, 2 lines long or less: pedicels naked, 1½ to 3 lines long: calyx-segments nearly equal, narrowly lanceolate, about equalling the oblong capsule (a line long); corolla purple, 2 or 3 lines long: anther-cells contiguous but transverse; sterile filaments papillose-pubescent: seeds very minute. — In shallow water on the plains of Guadalajara; October, 1889 (n. 2468). This species has the contiguous anther-cells of the section, but varies from it in their transverse position and in the longer ebracteolate pedicels.

Isoloma Jaliscanum. Stems herbaceous or somewhat woody at base, decumbent, about a foot high, pubescent throughout: leaves opposite, oblong-lanceolate, short-acuminate, rounded or acutish at base, serrate, 1 to 3 inches long, shortly petiolate: peduncles axillary,

½ to 1 inch long, bearing an umbel of 2 to 4 flowers on pedicels becoming ½ to 1½ inches long: calyx-lobes acuminate, 4 to 6 lines long in fruit; corolla an inch long, scarlet, pubescent, nearly straight, cylindric-funnelform, moderately dilated upward and the throat but little contracted: capsule turbinate-oblong, included. — On the Rio Blanco, Jalisco; 1888 (n. 1828); also collected by Dr. Palmer in 1886 (n. 577).

Beloperone Pringlei. Erect, pubescent, somewhat branched: leaves ovate-lanceolate, acutish, cuneate at base, short-petiolate, 1 or 2 inches long or smaller on the branches: spikes axillary and terminal, on very short peduncles, dense and imbricately bracteate, ½ to 1½ inches long; bracts foliaceous, sessile, about ½ inch long or more: calyx-segments narrowly lanceolate, unequal, the longer 4 lines long and about equalling the capsule: corolla yellow (?), narrowly tubular, 12 to 15 lines long, the narrow lips slightly cleft: seeds flattened. — Hills near Monterey; July, 1889 (n. 2548).

Priva armata. Low and slender, a foot high or less, much branched from the base, roughish hispid-pubescent throughout: leaves sessile, ovate, acute, coarsely and irregularly toothed and somewhat lobed, 9 lines long or less: spikes few-flowered, short and leafy-bracteate: corolla 3 or 4 lines long, the tube equalling the calyx: fruiting calyx subglobose, 3 lines in diameter, loosely enclosing the fruit, which is covered with stout straight spines. — Valley of Monterey; July, 1888 (n. 1931).

Poliomintha bicolor. Much branched, forming low dense clumps: leaves linear, or narrowly oblong (2 to 4 lines long) on short slender petioles, white beneath (as the branches and calyx) with a compact puberulence, glabrous and porulose above: calyx-teeth equal, erect; corolla 15 lines long, the very narrow tube pubescent within toward the base: sterile filament very short and rudimentary. — On summit ledges of the Sierra de la Silla, at 5,000 feet altitude; June, 1889 (n. 2536). Resembling *P. Greggii*, but without loose pubescence and the leaves narrower.

Scutellaria suffrutescens. Woody below, much and widely branched, about 6 inches high, the branches very finely puberulent: leaves entire, oblong-ovate, obtuse, shortly petiolate, 3 to 5 lines long: flowers solitary in the upper axils, on short pedicels: corolla pubescent, narrowly tubular, 9 lines long, greenish yellow and more or less tinged (especially the suberose lower tip) with red. — On the bare summit of the Sierra de la Silla, near Monterey, at 5,000 feet altitude; June, 1889 (n. 2535).

IRESINE PRINGLEI. Shrubby, finely tomentose, diœcious: very young leaves densely white-tomentose, becoming bright green and nearly glabrous above and thinly tomentose beneath, lanceolate, acute or acutish, subcuneate at base, short-petiolate, 2 or 3 inches long: inflorescence a broad open naked panicle, the small sessile clusters thickly scattered along the branches, often contiguous: bracts of staminate flowers very minute, the hyaline sepals linear-oblong; bracts of pistillate flowers broadly ovate, very thin, shorter than the calyx; sepals rigid, very woolly especially near the base, about $\frac{1}{2}$ line long, lanceolate, acuminate and the tips somewhat spreading, with a broad bright green midnerve and white margins. — On shaded ledges of the barranca near Guadalajara; November, 1888 (n. 1785). A species well marked by the peculiar calyx of the fertile flowers.

EUPHORBIA (CHAMÆSYCEÆ) LONGERAMOSA. Of the *Leiospermæ* group, annual, glabrous, the divaricate branches often 2 or 3 feet long: stipules lanceolate, laciniately cleft; leaves linear, obtuse at both ends or cuneate at base, very shortly petiolate, 6 to 15 lines long: involucres solitary in the axils or somewhat cymose, on mostly very short peduncles, broadly campanulate, a line long; lobes erect, triangular, acute or apiculate, entire; glands transversely oblong, with an erect yellowish broad reniform appendage: capsule small, acutely lobed, smooth: seed subcompressed-triangular. — On sand hills near Samalayuca, Chihuahua; September, 1889 (n. 2000).

EUPHORBIA (ZYGOPHYLLIDIUM) HEXAGONOIDES. Annual, slender, erect and branching, glabrous throughout or the involucres and floral leaves slightly pubescent: leaves all opposite, very narrowly linear, attenuate at each end and long-petiolate, $\frac{1}{2}$ to $1\frac{1}{2}$ inches long: involucres very small, the lobes scarious, quadrate, lacerate-dentate; glands purplish, incurved, with a horizontal deltoid appendage (sometimes very small or none): capsule with broad rounded lobes: seed a line long, ecarunculate, subtetragonal, acute, strongly and irregularly tuberculate. — On dry banks in the foothills of the Sierra Madre, Nuevo Leon; October, 1889 (n. 2016). Near *E. hexagona*.

EUPHORBIA (ESULÆ) LONGECORNUTA. Perennial, woody below, much branched, 6 inches high or more, glabrous and glaucous: leaves numerous, oblong to broadly elliptical, acute or acutish and mucronate, about 3 lines long: rays 3 to 5, short ($\frac{1}{2}$ inch), simple or once branched, the bracts like the cauline leaves or broader: involucres small (less than a line long), about equalling the peduncle; glands usually with long-attenuate horns nearly as long as the involucre; lobes oblong, densely ciliate: seeds coarsely and irregularly few-

pitted. — In crevices of cliffs at the summit of the Sierra de la Silla, at 5,000 feet altitude; June, 1889 (n. 2545). With wholly the habit of forms of *E. campestris*, differing in the smaller involucres, longer-appendaged glands, and in the seeds.

Acalypha dioica. Woody at base and apparently perennial, the erect stems sparingly branched, 1 or 2 feet high, finely pubescent, the pubescence on the upper surface of the leaves short-villous and subappressed: leaves ovate-lanceolate, short-acuminate, rounded at base, rather coarsely crenate-serrate, 1 or 2 inches long, on petioles 3 or 4 lines long: flowers diœcious (or the fertile spikes bearing only a rudimentary staminate flower at the apex); spikes all axillary, the staminate slender (1 to 1½ inches long), dense, long-pedunculate, the fertile nearly sessile, loosely few- (3–8-) bracteate; bracts reniform, 5–7-toothed, 1–2-flowered: capsule pubescent: seed globose, nearly smooth. — On limestone ledges near Monterey; June, 1889 (n. 2417). Resembling *A. glandulosa*, Cav., but the pubescence not at all glandular.

Nemastylis brunnea. Bulb dark-coated, 6 to 8 lines in diameter: stem nearly a foot high, bearing a single leaf 6 inches long, sheathing below and plaited above, and a concave sheathing acuminate bract subtending and equalling the peduncle; spathe several-flowered, 2½ inches long: perianth maroon-color or brownish purple, 6 lines long, the outer segments obtuse, the inner as long and similar, but acuminate and tipped with yellow: stamineal column a line long or more, the yellow anthers (2½ lines long) with a broadish connective: style-branches scarcely shorter, cleft nearly to the base, stigmatic half their length, bearing a filiform purple appendage in the sinus. — Described from flowering plants raised from bulbs collected near Guadalajara in 1889.

Zephyranthes erubescens. Bulb ovate, dark-coated, over an inch in diameter, the neck as long: leaves about six, 6 to 15 inches long by 2 or 3 lines broad, concave, not carinate, glaucous: scape 6 inches high; spathe tubular, bifid above, the tube equalling and closely embracing the pedicel (about an inch long): perianth 2 inches long, rather narrowly funnelform, white strongly tinged with rose-color without, the tubular base greenish: filaments very short, inserted on the throat, the slender anthers (3 lines long) exceeding the shortly lobed stigma. — Locality uncertain, but probably from sandy plains in Duval County, Texas, — perhaps northern Mexico; 1888. Described from plants in flower at Cambridge, August, 1889. Near *Z. Lindleyana*.

AGAVE (LITTÆA) VESTITA. Leaves very numerous, stiff, straight, ensiform, a foot long or less, by 6 or 8 lines broad, flat above, convex beneath, attenuate to a very pungent brown tip, covered throughout when young with a thin white continuous layer which is at length deciduous, leaving a smooth green surface variegated with scattered round lighter-colored spots, the margin bordered by long gray recurved threads: flowers sessile in pairs; ovary and narrowly turbinate tube each 4 lines long, the narrow segments of the perianth 6 lines long: filaments twice as long: capsule broadly oblong, 6 lines long. — On porphyritic ledges near Guadalajara; November, 1889 (n. 2432).

XYRIS MEXICANA. Leaves linear, straight, 3 to 6 inches long by 1 or 2 lines broad, exceeding the sheathing bracts of the culm, which is very slender, terete, flattened above: head globose or ovate, 3 to 5 lines long, rather few-flowered, the orbicular bracts greenish brown, becoming nearly black: lateral sepals linear, long-attenuate downward, ciliolate above on the nearly wingless keel, equalling the bract; blade of the petals obovate, 3 lines long: sterile stamens plumose: capsule cuneate-obovate. — Swampy places near Guadalajara; Dr. E. Palmer, September, 1886 (n. 445), and C. G. Pringle, November, 1888 (n. 1781). Most nearly resembling *X. flexuosa*, but differing in its dark-colored heads and longer unguiculate sepals.

INDEX.

Acacia, 147.
Acalypha, 162.
Agave, 163.
Ageratum, 153.
Alsodeia, 142.
Amyris, 144.
Andropogon, 139.
Apodanthera, 149.
Arabis, 124, *127*.
Artemisia, 133.
Arum, 137.
Aruncus, 132.
Aster, 133.
Astragalus, 129.
Atropis, 140.

Bauhinea, 147.
Begonia, 149.
Beloperone, 160.
Berendtia, 159.
Bocconia, 141.
Brachistus, 159.
Brahea, 136.
Bronguiartia, 146.
Buda, 127.
Bursera, 145.

Cacalia, 156.
Caladium, 138.
Calla, 138.
Camassia, 135.
Capsella, 142.
Chamæbatiaria, 132.
Chrysactinia, 154.
Cicuta, 150.
Clethra, 157.
Cnicus, 156.
Cologania, 147.
Corypha, 135.
Cotyledon, 148.
Cnisea, 152.
Cuphea, 149.

Dalea, 146.
Decatropis, 145.
Delphinium, 141.
Desmodium, 147.
Digitaria, 138.
Drymaria, 142.

Eleocharis, 138.
Eragrostis, 139.
Eremiastrum, 132.
Eriogonum, 134.
Eriogynia, 130.
Euphorbia, 161.

Filipendula, 132.
Forestiera, 157.

Glyceria, 140.
Gonzalea, 152.
Gratiola, 159.

Heliopsis, 153.
Hieracium, 133.
Holodiscus, 132.
Hypericum, 143.

Iresine, 161.
Iris, 134.
Isoloma, 159.

Jaliscoa, 153.

Lepidospartum, 133.
Lepigonum, 128.
Lobelia, 157.
Lupinus, 146.

Malvastrum, 143.
Mamillaria, 150.
Marsdenia, 158.
Metastelma, 158.
Milium, 139.
Myriophyllum, 148.

Neillia, 131.
Nemastylis, 162.

Omphalodes, 158.
Oreopanax, 151.
Oxalis, 144.

Paspalum, 138.
Passiflora, 149.
Pectis, 155.
Peltandra, 137.
Perezia, 156.
Perymenium, 154.
Peucedanum, 150.
Phaseolus, 130.

Physocarpus, 131.
Poa, 139, 140.
Poliomintha, 160.
Polygala, 142.
Prionosciadium, 150.
Priva, 160.
Puccinellia, 140.

Randia, 152.
Rhodosciadium, 151.
Ruppia, 138.

Sabal, 135.
Sargentia, 144.
Schizonotus, 131.
Scutellaria, 160.
Sedum, 148.
Senecio, 155.
Silene, 126.
Sisymbrium, 124.
Sisyrinchium, 135.
Sorbaria, 131.
Spergularia, 128.
Spermacoce, 152.
Spiræa, 130.
Spiræanthus, 132.
Spiranthes, 134.
Staphylea, 146.
Streptanthus, 125.
Strophostyles, 130.

Thalictrum, 141.
Thouinia, 145.
Tissa, 128.
Trifolium, 128.
Trixis, 157.

Ulmaria, 131.

Veatchia, 145.
Vicia, 129.

Washingtonia, 136.
Wyethia, 154.

Xanthosoma, 138.
Xyris, 163.

Zaluzania, 153.
Zephyranthes, 162.